Inter-Parliamentary Union
For democracy. For everyone.

Use cases for AI in parliaments

December 2024

Table of contents

Introduction

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI in parliaments.

A use case describes how a system should work. A use case differs from a case study, which is a descriptive text of an actual project's implementation.

These use cases have been developed by parliaments for their own use and are shared here to help others to plan, develop and measure the implementation of systems that use AI.

For more information about the use of AI in parliaments, refer to the IPU issue brief *Using generative AI in parliaments* and to the AI pages on the IPU website.

Use cases are grouped in the following categories:

- Classification systems: AI tools that categorize volumes of data to group (often using a thesaurus).
- Bill drafting and amendments: AI tools that support legislative drafting and the management of amendments.
- Transcription and translation: AI tools that support the production of verbatim reports or subtitles for video content.
- Chatbots and user support: AI tools that use natural-language prompts to help users better understand parliamentary processes or data, including bills and amendments.
- Public engagement and open parliament: AI tools that support public engagement, particularly the analysis of large volumes of public submissions.
- Cybersecurity and application development: AI tools that support the development of secure parliamentary systems.

Use cases have been contributed by: the Council of Representatives and Shura Council of Bahrain, the Chamber of Deputies of Brazil, the Chamber of Deputies of Chile, the Estonian Parliament, the European Parliament, the Parliament of Finland, the Parliament of Israel, the Chamber of Deputies of Italy, and the Senate of Italy.

Use case ID	Title	Purpose	Author	Published	Keywords
CLASSIFICATION SYSTEMS					
001	**Automatic classification of policy and control acts on government**	Automatically classify policy and control Acts on government.	Chamber of Deputies of Italy	28/05/24	classification, EuroVoc, act
007	**Automatic classification of legislative documents**	Provide an automatic classification of legislative documents based on a thesaurus.	Chamber of Deputies of Italy	28/05/24	classification, EuroVoc
012	**Tags and summaries of parliamentary reports**	Group the report of a plenary session into sections based on subjects, generating tags and a brief summary for each section.	Chamber of Deputies of Italy	28/05/24	plenary, verbatim record
013	**Classification of input texts with predefined labels from the Eurovoc thesaurus**	Classify input texts with predefined labels from the EU's Eurovoc thesaurus with an automatic indexing tool.	European Parliament	07/06/24	classification, EuroVoc, document management
018	**Thematic classification of portal content**	Read the text of bills, laws, news items, speeches, studies and other content available on the portal, interpret it, and classify it according to a fixed set of themes.	Chamber of Deputies of Brazil	14/06/24	classification
028	**Text classification based on multiple thesauruses**	Automatically classify parliamentary texts according to multiple thesauruses (such as TESEO and Eurovoc),	Senate of Italy	09/07/24	classification, EuroVoc
039	**Entity recognition and tagging in legislative texts**	Automatically identify and tag relevant entities, such as people, organizations, locations, dates and legal references, within legislative texts.	Senate of Italy	09/07/24	parliamentary documents, tagging
041	**Targeted legislative text extraction and highlighting**	Automatically extract and highlight specific portions of legislative texts or documents that	Senate of Italy	09/07/24	parliamentary documents, tagging, summaries

Use case ID	Title	Purpose	Author	Published	Keywords
	tool	meet given criteria.			
043	**Parliamentary act metadata extraction and summary generator**	Extract metadata and compile summary sheets or tables from a collection of parliamentary acts.	Senate of Italy	09/07/24	parliamentary documents, tagging, summaries
046	**Data normalization of historical parliamentary affairs and documents**	Automatically normalize parliamentary affairs and documents (2001–2014) to match the logical structure of newer data in order to make materials more findable, accessible, interoperable and reusable for search and APIs.	Parliament of Finland	10/07/24	parliamentary documents, tagging, restructuring
BILL DRAFTING AND AMENDMENTS					
002	**Semi-automated production of verbatim report of sittings using automatic speech recognition**	Produce draft verbatim reports of parliamentary sittings using automatic speech recognition.	Chamber of Deputies of Italy	28/05/24	transcription, speech recognition, verbatim proceedings
004	**Automatic ordering of amendments from presentation order to voting order**	Receive, store and number amendments according to presentation time (voting order).	Chamber of Deputies of Italy	28/05/24	bill, amendments, classification
005	**Computation of amendment similarity scores**	Compare amendments to identify similarities.	Chamber of Deputies of Italy	28/05/24	bill, amendments, comparison
009	**Automatic production of summary notes for dossiers related to bills**	Use LLM to produce automatic summaries of notes relating to bills.	Chamber of Deputies of Italy	28/05/24	bill, summary

Use case ID	Title	Purpose	Author	Published	Keywords
019	**Distribution of demands from MPs among groups of lawmaking experts**	Process and interpret demands sent by MPs to the legislative consultancy for new bill drafting or research to support new bills.	Chamber of Deputies of Brazil	14/06/24	legislative drafting, bill
020	**Retrieval of relevant documents for the lawmaking expert handling an MP's demand**	Read demands sent by MPs to the legislative consultancy for new bill drafting or research to support new bills, interpret it, and present the most relevant related documents to lawmaking experts.	Chamber of Deputies of Brazil	14/06/24	legislative drafting, bill
021	**Semantic clustering of amendments**	Read the amendments proposed by MPs for a specific bill, interpreting them and grouping them according to semantic similarity.	Chamber of Deputies of Brazil	14/06/24	Bills, amendments, committee, legislative drafting
026	**Document summarization for enhanced accessibility and comprehension**	Provide users with concise and accurate summaries of legislative bills and other parliamentary documents.	Senate of Italy	09/07/24	parliamentary documents, summaries
027	**Extraction and marking of legal references**	Automatically extract and mark legal references within parliamentary documents.	Senate of Italy	09/07/24	parliamentary documents, extracts
034	**Modification of the text of a law following the approval of an addition or amendment**	Generate a modified version of a legal text following the approval of an addition or amendment, producing a side-by-side text.	Senate of Italy	09/07/24	parliamentary documents, amendments
036	**Amendment and legislative text similarity assessment tool**	Assess the degree of similarity among legislative texts and group them into clusters based on their similarities.	Senate of Italy	09/07/24	parliamentary documents, summaries
037	**Automatic sequencing of the voting order on amendments**	Determine the precise and most efficient order for voting on amendments in the chamber.	Senate of Italy	09/07/24	parliamentary documents, amendments

Use case ID	Title	Purpose	Author	Published	Keywords
038	**Drafting of amendments to legislative texts**	Assist parliamentary staff in drafting amendments to legislative texts	Senate of Italy	09/07/24	parliamentary documents, amendments
040	**Verification of compliance with legislative drafting rules**	Support the drafting of legislative acts (bills and amendments) by verifying compliance with established drafting rules, ensuring consistency, accuracy and adherence to legal standards.	Senate of Italy	09/07/24	bills, legislative drafting, amendments
048	**Bill drafting assistant**	Foster the integral and efficient creation of bills through the integration of multiple AI-based assistants, achieving analysis of quorum rating, admissibility, related norms and regulatory impact, among others.	Chamber of Deputies of Chile	25/09/24	bill drafting, regulatory impact
051	**Quorum rating assistant**	Determine the type of quorum according to legal regulations and the Constitution.	Chamber of Deputies of Chile	25/09/24	amendments, voting
053	**Argumentation assistant**	Argue or counter-argue based on a legislative text.	Chamber of Deputies of Chile	25/09/24	amendments
054	**Admissibility assistant**	Determine the admissibility of a bill.	Chamber of Deputies of Chile	25/09/24	bill drafting
057	**Regulatory impact assistant**	Assist in improving, optimizing or amending a motion or bill for legal correctness and feasibility.	Chamber of Deputies of Chile	25/09/24	amendments
058	**Parliamentary debate assistant**	Understand the content, arguments, opinions, literal statements, outcomes, votes, interventions, etc. of historical debates held in the Chamber of Deputies.	Chamber of Deputies of Chile	25/09/24	bills, amendments, voting

Use case ID	Title	Purpose	Author	Published	Keywords
052	**AI-powered MP attendance monitoring and real-time quorum calculation with advanced visualizations**	Automatically track and analyze MP attendance within the parliamentary chamber	Council of Representatives of Bahrain	19/11/24	member attendance
TRANSCRIPTION AND TRANSLATION					
003	**Automatic subtitling of assembly sessions for WebTV**	Produce real-time subtitles of speeches during assembly sittings for WebTV.	Chamber of Deputies of Italy	28/05/24	broadcast, web tv, subtitles
006	**Automatic transcription of handwritten manuscripts from historical archives**	Transcribe handwritten manuscripts from archives.	Chamber of Deputies of Italy	28/05/24	transcription, archive
016	**AI-powered verbatim records system (HANS)**	Automate stenography in sittings and assist in the preparation of committee minutes.	Estonian Parliament	11/06/24	speech-to-text, verbatim record
022	**Speech-to-text transcription**	Transcribe recorded audio or video files into text.	Chamber of Deputies of Brazil	14/06/24	speech-to-text, transcription
031	**Automatic transcription of parliamentary sessions**	Provide reliable transcriptions of sessions of the Senate bodies.	Senate of Italy	09/07/24	speech-to-text, transcription
032	**Creation of draft summary reports based on transcripts of parliamentary sessions**	Generate summary reports, in the standard style of Senate summary reports, derived from the transcript of a chamber or committee session.	Senate of Italy	09/07/24	speech-to-text, transcription
033	**Generation of draft stenographic reports based on transcripts of parliamentary sessions**	Generate a draft stenographic report from the transcript of a chamber or committee session, adhering to the Senate's format and standards.	Senate of Italy	09/07/24	speech-to-text, transcription

Use case ID	Title	Purpose	Author	Published	Keywords
035	**AI-enhanced parliamentary document translation system**	Translate parliamentary documents leveraging AI-powered LLMs to support multilingual communication and documentation.	Senate of Italy	09/07/24	parliamentary documents, translation
044	**Summarizing of parliamentary documents and conversion into podcasts**	Generate summaries of XML or PDF documents (of between 10 and 1,000 pages) published on the parliamentary website, and create audio files for the podcast.	Parliament of Finland	10/07/24	text-to-speech, summaries
047	**Audio-to-text parliamentary transcription system**	Transcribe recorded audio files into text, supporting various parliamentary functions.	Parliament of Israel	10/07/24	speech-to-text
059	**Chamber session summary assistant**	Obtain, generate or propose the structure of a Chamber session for drafting minutes and reports.	Chamber of Deputies of Chile	25/09/24	parliamentary record
060	**Committee session summary assistant**	Obtain, generate or propose the structure of a committee session for drafting minutes and reports.	Chamber of Deputies of Chile	25/09/24	parliamentary record
062	**Automated Hansard report system: Converting parliamentary audio to text using AI**	Automatically transcribe parliamentary sessions from audio to text, generating accurate Hansard reports in real-time.	Council of Representatives of Bahrain	19/11/24	parliamentary record
065	**Hansard Voice-to-Text conversion and review**	Convert spoken dialogue from parliamentary meetings into accurate written texts, categorized by topic and indexed by speaker for each item of the session meeting,	Shura Council of Bahrain	19/11/24	parliamentary record
CHATBOTS AND USER SUPPORT					
008	**Chatbot for the parliamentary**	Provide a natural-language chatbot for users	Chamber of Deputies of	28/05/24	natural language, chatbot,

Use case ID	Title	Purpose	Author	Published	Keywords
	documentation website	to query parliamentary documentation.	Italy		public engagement
010	**Chatbot for a better understanding of the process of a bill**	Provide a natural-language chatbot for users to query parliamentary proceedings regarding a bill.	Chamber of Deputies of Italy	28/05/24	bill, natural language, chatbot, public engagement
011	**Chatbot for simplifying the comprehension of Italian laws**	Provide a natural-language chatbot for users to query sets of national laws.	Chamber of Deputies of Italy	28/05/24	bill, natural language, chatbot, legislative drafting, public engagement
014	**Chatbot on security in the European Parliament**	Provide a chatbot to increase access to information, particularly about security issues.	European Parliament	07/06/24	chatbot, customer support, security
015	**AI-powered customer support chatbot**	Provide 24/7 customer support and improve response times using an AI-powered chatbot.	European Parliament	07/06/24	chatbot, customer support
017	**AI-powered automated subtitling system**	Subtitle live broadcasts from the session hall to make them accessible to hearing-impaired individuals.	Estonian Parliament	11/06/24	speech-to-text, captioning, subtitles
049	**Regulations and parliamentary allowances assistant**	Respond to questions and requests for information related to the regulations, manuals or documents governing parliamentary allowances and their use.	Chamber of Deputies of Chile	25/09/24	user support, parliamentary allowances
050	**Current legal norms assistant**	Respond to questions and requests for information related to any current legal norms by accessing the national legal normative database.	Chamber of Deputies of Chile	25/09/24	user support, legal norms
055	**Invoice information extraction assistant**	Extract relevant information from expense accreditation documents such as receipts or invoices.	Chamber of Deputies of Chile	25/09/24	user support, expenses

Use case ID	Title	Purpose	Author	Published	Keywords
056	**Online parliamentary allowances data assistant**	Know specific information about consumption, available funds or total allocations in parliamentary allowances management systems, thus affecting enquiry speed and eliminating the first line of query to parliamentary assistants.	Chamber of Deputies of Chile	25/09/24	user support, expenses
061	**AI-powered parliamentary bill and document chatbot for enhanced legislative analysis**	Provide real-time access to all parliamentary bills and documents, improving the process of bill formation and analysis.	Council of Representatives of Bahrain	1911/24	user support, bill texts
064	**Automated assistant for parliamentary query resolutions**	To enhance the efficiency and improve the accuracy of query resolutions related to legislative matters.	Shura Council of Bahrain	19/11/24	user support, bill texts
PUBLIC ENGAGEMENT AND OPEN PARLIAMENT					
023	**Analysis of citizens' opinions on bills**	Read citizens' comments on a bill, expressed in e-polls and other participatory channels, in order to identify and categorize the main arguments for or against the bill.	Chamber of Deputies of Brazil	14/06/24	public participation, submissions, textual analysis
024	**Natural-language querying of parliament's website**	Enable users to query the Senate website's search engines using natural language processed by LLM-based AI, enhancing the accessibility, accuracy and user experience of the search functionality.	Senate of Italy	09/07/24	website query, natural language
025	**Website content navigation chatbot**	Assist users in navigating the Senate website by providing an AI-powered chatbot that offers content recommendations and guidance based on user queries in natural language.	Senate of Italy	09/07/24	website query, natural language

Use case ID	Title	Purpose	Author	Published	Keywords
029	**Natural-language querying of legislative processes and contents**	Enable users to query the progress and content of laws, bills and other parliamentary acts using natural language, improving accessibility and user experience by allowing intuitive, human-like interactions with the legislative database.	Senate of Italy	09/07/24	query, natural language
030	**Natural-language querying of external data sources**	Enable users to query external data sources, such as the Italian National Institute of Statistics (ISTAT) website or the Normattiva website (portal of current laws), using natural language.	Senate of Italy	09/07/24	query, natural language
042	**Translation of natural-language queries into SPARQL queries for parliamentary open data**	Translate natural-language queries into SPARQL queries, in order to enable users to interact with parliamentary open data stored in a structured ontology.	Senate of Italy	09/07/24	query, natural language
063	**Interactive AI-powered parliamentary data visualization with GraphRAG**	Automatically visualize parliamentary open data by creating interactive node-based representations of bills and their associated discussions, videos and audio recordings.	Council of Representatives of Bahrain	1911/24	visualization, open parliament, transparency, bills
CYBERSECURITY AND APPLICATION DEVELOPMENT					
045	**Narrowing of the attack threshold of parliamentary applications**	Use automated static application security testing (SAST) to ensure the quality of developers' application code and to detect potential security gaps in the source code.	Parliament of Finland	10/07/24	application development, quality assurance

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Classification systems

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic classification of policy and control acts on government

Use case ID: 001
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Provide an automatic classification, according to the EuroVoc[1] thesaurus, of policy and control acts on government, using a machine learning algorithm for classification.

Actors:
- Business units
- Classification system

Prerequisites:
- Existing database of documents as training data
- Knowledge of the EuroVoc thesaurus
- AI classification model trained to assign labels to the documents

Scenario:
1. A new policy and control act is submitted and inserted inside the database.
2. The classification model suggests the most suitable EuroVoc labels for that act.
3. The user can either accept or modify the list of labels.
4. The labels associated with the act are stored as metadata.

Expected results:
- The process of assigning EuroVoc labels to documents is more efficient.

Potential challenges:
- Unbalanced dataset
- Non-interpretable model (e.g. neural networks)
- Long training time (weakly scalable in training data size)
- Some kinds of models could not be robust to outliers

[1] EuroVoc is a multilingual thesaurus maintained by the Publications Office of the European Union.

- Avoid overfitting

Data requirements:

- Policy and control acts database

Integrations with other systems:

- Policy and control acts database

Success metrics:

- Reduction of the time needed to classify policy and control acts
- Percentage of policy and control acts classified without any modification made by humans to the labels
- Average response time needed to classify

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic classification of legislative documents

Use case ID: 007
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Provide an automatic classification, according to the EuroVoc thesaurus, of Italian legislative documents from the Italian Official Gazette.

Actors:
- Business units
- Classification system

Prerequisites:
- Existing database of legislative documents as training data
- Knowledge of the EuroVoc thesaurus
- AI classification model trained to assign labels to the documents

Scenario:
1. A new legislative document is submitted and inserted inside the database.
2. The classification model suggests the best EuroVoc labels for that act.
3. The user can either accept or modify the list of labels associated with the act.
4. The labels associated with the act are stored as metadata.

Expected results:
- The process of assigning EuroVoc labels to documents is more efficient.

Potential challenges:
- Unbalanced dataset
- Non-interpretable model (e.g. neural networks)
- Long training time (weakly scalable in training data size)
- Some kinds of models could not be robust to outliers
- Avoid overfitting

Data requirements:

- Legislative documents database

Integrations with other systems:

- Legislative documents database

Success metrics:

- Reduction of the time needed to classify legislative documents
- Percentage of legislative documents classified without any modification to the labels made by humans
- Average response time needed to classify

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Tags and summaries of parliamentary reports

Use case ID: 012
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Automatically divide the report of a plenary session into sections based on subjects. Generate tags and a brief summary for each section.

Actors:
- Business units

Prerequisites:
- Existing database and content management system for verbatim reports

Scenario:
1. The user selects the verbatim report associated with a specific sitting.
2. The AI algorithm is executed on the verbatim report, which serves as input.
3. The AI algorithm divides the report into sections based on subjects.
4. The AI algorithm provides tags and a brief summary for each section.
5. The user keeps working on legislative documentation, using this information as a support.

Expected results:
- Workload for colleagues is reduced.
- It takes less time to produce legislative documentation.

Potential challenges:
- Ensuring the AI chatbot provides accurate and relevant responses
- Ensuring that the report is split correctly according to the various subjects covered during the sitting
- For each section, ensuring that the summary produced is exhaustive
- For each section, ensuring that the tags generated are appropriate

Data requirements:

- Database and content management system for verbatim reports of sittings

Integrations with other systems:

- System used to manage verbatim reports for sittings

Success metrics:

- User satisfaction scores for the split produced by the algorithm
- For each section, user satisfaction scores for the summary
- For each section, user satisfaction scores for the tags
- Time needed to produce parliamentary documentation

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Classification of input texts with predefined labels from the EuroVoc thesaurus

Use case ID: 013
Author: European Parliament
Date: 5 June 2024

Objective:
The Innovation, Intranets and Digital Solutions Unit (INNOVIT) team fine-tuned this EUBERT-based automatic indexing tool in order to allow it to classify input texts with predefined labels from the European Union's (EU) EuroVoc thesaurus.

EuroVoc is a large, multidisciplinary, multilingual (24 languages of the EU), hierarchical thesaurus of more than 7,000 classes covering the activities of EU institutions. Given the number of legal documents produced every day and the huge mass of pre-existing documents to be classified, high-quality automated or semi-automated classification methods are most welcome in this domain.

This model, based on the BERT deep neural network, was trained on more than 3,200,000 documents to achieve that task and is used in a production environment via the HuggingFace inference endpoint. This model supports the 24 languages of the EU.

Actors:
- Innovation, Intranets and Digital Solutions Unit (INNOVIT)
- Directorate for Publishing, Innovation and Data Management
- Directorate-General for Innovation and Technological Support (DG ITEC)

Prerequisites:
- No hardware or software requirements if the end-user interface is used
- Coding and package requirements if the model is integrated into an existing solution

Scenario:
1. The end user inputs a document to classify.

2. The system processes the input document and outputs a set of predefined labels with corresponding confidence scores.

Alternate flows:

- If the document is in a language not supported by the model, the system will flag it as unsupported.

Expected results:

- The system provides accurate classification of legal and policy documents based on the EuroVoc thesaurus.
- Document classification within EU institutions is more efficient and accurate.

Potential challenges:

- Ensuring model accuracy across all 24 languages
- Handling ambiguous or poorly structured text inputs
- Maintaining performance and speed with large volumes of documents

Data requirements:

- Input: text documents in any of the 24 supported languages of the EU
- Predefined EuroVoc labels for classification (the EuroVoc thesaurus was developed by the European Parliament (EP), in collaboration with the Publications Office of the EU (OP), and has more than 7,000 classes)
- Historical data for model training and fine-tuning (EP Public Register of Documents)

Integrations with other systems:

- The model is integrated in some of the applications developed in-house, such as Monitor Partners' Interest, a content aggregation solution for scraping, translating and indexing websites and sources of interest.

Success metrics:

- Micro F1 score (threshold value: 0.46)
- High normalized discounted cumulative gain (NDCG) scores
- User satisfaction and feedback from end users regarding classification accuracy and relevance

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Thematic classification of portal content

Use case ID: 018
Author: Chamber of Deputies of Brazil
Date: 14 June 2024

Objective:
Read the text of bills, laws, news articles, speeches, studies and other content available on the portal, interpret this content, and classify it according to a fixed set of macro themes (e.g. economics, health, technology, human rights). This enables thematic pages to be automatically generated on the portal.

Actors:
- Portal Content and Management staff
- Information Management staff
- AI system for thematic classification of portal content

Prerequisites:
- Macro themes validated by both the Portal Content and Management staff and the Information Management staff
- AI model trained for thematic classification
- Integration with digital services used to supply the portal with new content, such as bills, laws, news articles and legislative studies
- Seamless integration with a powerful search and analytics engine

Scenario:
1. When a new bill (or other relevant content for the portal) is inserted into the appropriate digital service, it is indexed by the search engine and thematically classified by the AI system, without requiring any user intervention.

Alternate flows:
- When content is incorrectly classified by the AI system, a Portal Content and Management staff member or an Information Management staff member can assign a new classification. This feedback should be utilized to retrain the AI model and enhance future classifications.

Expected results:

- Portal users seeking access to content centered on specific macro themes, such as health, economics or technology, have their needs fulfilled.
- Biases in the classification of thematic portal content are mitigated.
- Workload for Portal Content and Management staff is reduced.

Potential challenges:

- Ensuring the AI model accurately classifies content amid emerging new topics
- Detecting potential deterioration in the accuracy of the AI system over time
- Encouraging users to provide feedback

Data requirements:

- Historically themed and classified content for training AI models
- Bidirectional API-driven data exchange linking the search engine and the AI model
- Periodic verification of AI model accuracy

Integrations with other systems:

- Digital services used to supply the portal with new content
- Enhanced search and analytics engine with integrated OCR and advanced indexing features
- Analytics and reporting tools

Success metrics:

- Accuracy rate of content classification by the AI model (Top-1 accuracy)

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Text classification based on multiple thesauruses

Use case ID: 028
Author: Senate of Italy
Date: 12 June 2024

Objective:
Automatically classify parliamentary texts according to multiple thesauruses (such as TESEO and Eurovoc), enhancing the organization, searchability and retrieval of information.

Actors:
- Senate document management and research teams
- Senate IT and web development team
- Artificial intelligence (AI) system for text classification

Prerequisites:
- Existing database of parliamentary texts
- Trained large language model (LLM)-based AI model for text classification
- Access to thesauruses such as TESEO and Eurovoc
- Internet accessibility for users

Scenario:
1. The user accesses a parliamentary text on the Senate website.
2. The user initiates the classification process by clicking a button or issuing a command.
3. The LLM-based AI model processes the text to classify it according to the selected thesauruses (e.g. TESEO, Eurovoc).
4. The system suggests appropriate categories or descriptors for the text from the thesauruses, explaining the motivations behind the suggestions.
5. The user can choose whether or not to approve the suggested descriptors.
6. The classified text is displayed with the approved thesaurus categories marked or listed.
7. Users can search and filter documents based on these classifications.

Alternate flows:

- If the AI model cannot confidently classify the text, it prompts the user for manual verification and correction.
- For texts that span multiple categories, the system may offer detailed subclassification.

Expected results:

- Accuracy and efficiency in classifying parliamentary texts according to various thesauruses is improved.
- The organization and searchability of parliamentary documents are enhanced.
- The time and effort required for manual classification is reduced.
- Consistency and reliability in the application of thesaurus categories are increased.

Potential challenges:

- Ensuring the LLM-based AI model can accurately classify diverse types of texts across different thesauruses
- Handling documents with complex language or multiple relevant categories
- Continuously updating the LLM-based AI model to adapt to changes in thesauruses and new document types

Data requirements:

- Historical texts with annotated thesaurus classifications for training and improving the LLM-based AI model
- Current database of parliamentary texts
- Access to updated versions of thesauruses (TESEO, Eurovoc, etc.)

Integrations with other systems:

- Existing Senate website infrastructure
- LLM-based AI processing systems and models
- Thesauruses databases (TESEO, Eurovoc, etc.)

Success metrics:

- Accuracy rate of text classifications
- User satisfaction ratings and feedback
- Reduction in time spent on manual text classification
- Increase in the number of texts classified automatically
- Consistency and reliability of classifications across different documents

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual

project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Entity recognition and tagging in legislative texts

Use case ID: 039
Author: Senate of Italy
Date: 12 June 2024

Objective:
Automatically identify and tag relevant entities such as people, organizations, locations, dates and legal references within legislative texts, thereby enhancing the efficiency and accuracy of legal document analysis and research.

Actors:
- Parliamentary staff members
- Artificial intelligence (AI) development and support team

Prerequisites:
- Access to a comprehensive dataset of legislative texts
- Pre-trained language models specialized in legal text
- Integration with parliamentary document management systems
- Defined user access permissions and roles

Scenario:
1. A parliamentary staff member uploads a legislative document to the system.
2. The AI system processes the document using natural language processing (NLP) techniques.
3. The AI system identifies and tags relevant entities such as names of legislators, dates, legal references and specific terms.
4. The tagged document is reviewed by the legal analyst for accuracy.
5. The document, now enriched with metadata, is stored in the parliamentary document management system.
6. MPs and other authorized users can search and retrieve documents based on tagged entities, facilitating quicker access to relevant information.

Alternate flows:
- If the uploaded document format is not supported, the system prompts the user to convert the document into a supported format.

- In case of ambiguity or low-confidence tags, the system flags these instances for manual review and correction by the legal analyst.

Expected results:

- Accuracy and speed in legal text analysis are enhanced.
- Searchability and retrieval of legislative documents are improved.
- Manual workload for legal analysts is reduced.
- MPs make better-informed decisions through quick access to relevant information.

Potential challenges:

- Ensuring the AI system accurately identifies and tags entities in complex legal language
- Handling variations and updates in legal terminology and references
- Integrating the AI system seamlessly with existing document management systems
- Addressing concerns related to data privacy and security

Data requirements:

- Historical legislative documents for model training
- Annotations of legal entities for supervised learning
- Continual updates of legal texts and terminologies to refine the model

Integrations with other systems:

- Parliamentary document management system
- Legal databases for cross-referencing
- User authentication and access control systems

Success metrics:

- Accuracy rate of entity recognition and tagging
- Reduction in time taken for legal analysts to annotate documents
- Increase in the number of successful searches for tagged entities
- User satisfaction scores from parliamentary staff and researchers

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Targeted legislative text extraction and highlighting tool

Use case ID: 041
Author: Senate of Italy
Date: 12 June 2024

Objective:
Automatically extract and highlight specific portions of legislative texts or documents that meet given criteria, such as references to implementing provisions or expenditure forecasts, in order to support legal analysis and decision-making.

Actors:
- Parliamentary staff members
- MPs
- Legislative drafters
- Artificial intelligence (AI) development and support team

Prerequisites:
- Access to a comprehensive dataset of legislative texts
- Predefined criteria for extraction (e.g. references to implementing provisions or expenditure forecasts)
- Pre-trained language models specialized in legal text analysis
- Integration with parliamentary document management systems

Scenario:
1. A parliamentary staff member uploads a legislative document to the system.
2. The staff member chooses the criteria for extraction, such as references to implementing provisions or expenditure forecasts.
3. The AI system processes the document using natural language processing (NLP) techniques.
4. The AI system identifies and highlights/extracts the portions of the text that meet the specified criteria.
5. The highlighted/extracted document is reviewed by the staff member for accuracy.
6. MPs and other authorized users can search and retrieve documents based on the highlighted/extracted sections, facilitating quicker access to relevant information.

Alternate flows:

- If the uploaded document format is not supported, the system prompts the user to convert the document into a supported format.
- In case of ambiguity or low-confidence extractions, the system flags these instances for manual review and correction by the staff member.

Expected results:

- Accuracy and speed in identifying relevant portions of legislative texts are enhanced.
- Searchability and retrieval of critical information within documents are improved.
- Manual workload for researchers and drafters is reduced.
- MPs make better-informed decisions through quick access to pertinent information.

Potential challenges:

- Ensuring the AI system accurately identifies and highlights/extracts relevant portions in complex legal language
- Handling variations and updates in legal terminologies and references
- Integrating the AI system seamlessly with existing document management systems

Data requirements:

- Historical legislative documents for model training
- Annotations of relevant portions for supervised learning
- Continual updates of legal texts and terminologies to refine the model

Integrations with other systems:

- Parliamentary document management system
- Legal databases for cross-referencing
- User authentication and access control systems

Success metrics:

- Accuracy rate of extraction and highlighting of relevant portions
- Reduction in time taken for researchers to identify relevant sections
- Increase in the number of successful searches for highlighted portions
- User satisfaction scores from parliamentary staff and researchers

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual

project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Parliamentary act metadata extraction and summary generator

Use case ID: 043
Author: Senate of Italy
Date: 18 June 2024

Objective:
Automatically extract metadata and compile summary sheets or tables from a collection of parliamentary acts, enhancing the efficiency and accuracy of legislative document analysis and research.

Actors:
- Parliamentary staff members
- MPs
- Legislative drafters
- Artificial intelligence (AI) development and support team

Prerequisites:
- Access to a comprehensive dataset of parliamentary acts
- Predefined criteria for metadata extraction (e.g. references to implementing provisions or expenditure forecasts)
- Pre-trained language models specialized in legal text analysis
- Integration with parliamentary document management systems

Scenario:
1. A parliamentary staff member uploads a set of parliamentary acts to the system.
2. The staff member specifies the criteria for metadata extraction, such as references to implementing provisions, expenditure forecasts or other key elements.
3. The AI system processes the documents using natural language processing (NLP) techniques.
4. The AI system identifies and extracts the relevant metadata from each document.

5. The extracted metadata are used to automatically compile summary sheets or tables, with the information organized in a structured and accessible format.
6. The staff member reviews the compiled summaries for accuracy and completeness.
7. MPs and other authorized users can search and retrieve the summary sheets, facilitating quicker access to relevant information.

Alternate flows:

- If the uploaded document format is not supported, the system prompts the user to convert the documents into a supported format.

Expected results:

- Accuracy and speed in extracting and compiling metadata from legislative texts are enhanced.
- Searchability and retrieval of critical information within documents are improved.
- Manual workload for staff members is reduced.

Potential challenges:

- Ensuring the AI system accurately identifies and extracts relevant metadata in complex legal language
- Handling variations and updates in legal terminologies and references
- Integrating the AI system seamlessly with existing document management systems

Data requirements:

- Historical parliamentary acts for model training
- Annotations of relevant metadata for supervised learning
- Continual updates of legal texts and terminologies to refine the model

Integrations with other systems:

- Parliamentary document management system
- User authentication and access control systems

Success metrics:

- Accuracy rate of metadata extraction
- Reduction in time taken for researchers to compile summary sheets
- Increase in the number of successful searches for summarized metadata
- User satisfaction scores from parliamentary staff and researchers

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Data normalization of historical parliamentary affairs and documents

Use case ID: 046
Author: Parliament of Finland
Date: 2 July 2024

Objective:
Automatically normalize parliamentary affairs and documents (2001–2014) to match the logical structure of newer data in order to make materials more findable, accessible, interoperable and reusable (FAIR) for search and application programming interfaces (APIs).

Actors:
- Software vendor
- Parliamentary business owners
- Parliamentary IT office staff
- Artificial intelligence (AI) tools

Prerequisites:
- Database of parliamentary affairs and documents, 2001–2014 (SGML)
- Database of parliamentary affairs and documents, 2015–2024 (XML)
- Data and schema model for 2015–2024
- Machine learning service trained on the data and schema model
- Natural language processing (NLP) service that uses machine learning to identify insights and relationships in text

Scenario:
1. The software vendor collects the data from the defined source databases, with the help of IT office staff.
2. The software vendor filters low-quality, incorrect and otherwise unwanted data from the data in the source database, and possibly derives the necessary missing information, with support from business owners.
3. The software vendor stores the converted data in the actual data warehouse for further processing.

4. The software vendor identifies key candidates for the relationship and selects the most suitable one as the basic key of the relationship in cooperation with business owners.
5. The software vendor and IT office staff provide data to the AI tools for normalization (input), as well as learning material (expected output) against which the input is normalized.
6. After AI normalization, the software provider implements the normalization check on a relation-by-relation basis. The normalization check requires the intervention (randomly or other technique) of business owners for assurance that the result is correct.

Alternate flows:

- The data normalization work is done entirely manually.

Expected results:

- Data in SGML format can be normalized to the newer XML schema.
- Parliamentary affairs and documents 2001–2024 use the same data model and schema model.
- Similar search factors can be applied to parliamentary affairs and documents, regardless of the year the material originates from.

Potential challenges:

- Serious flaws in defining the tool's presets in order to unify the data
- Excessively imprecise results from automatic processing, requiring more manual work.
- Insufficiently accurate automatic data processing, potentially leading to the need for data normalization to be re-evaluated, as the amount of manual work is likely to outweigh the benefits

Data requirements:

- Accurate training material for data analysis

Integrations with other systems:

- Machine learning service
- NLP service
- Data modelling and analytics tools
- Final operational database

Success metrics:

- The data are reaching the third normal form (3NF).
- Data content in the operational database is 98% correct.
- As a result of automatic normalization, no more than 2% errors are found in parliamentary affairs and documents in relation to the amount of processed material.

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Bill drafting and amendments

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Semi-automated production of verbatim reports of sittings using automatic speech recognition

Use case ID: 002
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Produce draft verbatim reports of parliamentary sittings using solutions based on automatic speech recognition (ASR). The draft is reviewed by humans and then published.

Actors:
- Business units
- ASR system

Prerequisites:
- Existence of audio signal of speeches
- Existence of a pre-trained speech-to-text model

Scenario:
1. A new segment of audio signal of a speech is available (e.g. one five-minute segment).
2. The AI speech-to-text model produces the corresponding text.
3. The text is reviewed by colleagues.
4. All the text segments are concatenated and reviewed.
5. The final verbatim report is published.

Expected results:
- The process of producing verbatim reports of sittings is more efficient.

Potential challenges:
- ASR model not properly trained
- The ASR model might not work well with dialects and specific terms not used during the training phase (e.g. the term “COVID-19” was used a lot during the pandemic period, but it was unknown before)

Data requirements:

- The ASR model should be trained on a large dataset of verbatim reports of sittings.

Integrations with other systems:

- Editor used to review the texts
- The chain of systems used to publish the verbatim report

Success metrics:

- Reduction of the time needed to produce the segments of the verbatim report
- Reduction of the time needed to produce the whole verbatim report

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic ordering of amendments from presentation order to voting order

Use case ID: 004
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Amendments are received, stored and numbered according to presentation time. Business units need to have amendments ordered according to voting order.

Actors:
- Business units
- Dossier of amendments

Prerequisites:
- Amendments stored in a structured way inside a database
- Dossier of amendments stored in a content management system
- Knowledge of the rules according to which amendments are to be ordered according to voting order

Scenario:
1. The amendments are submitted by MPs, received by offices, stored in a structured way inside a database and numbered according to presentation time.
2. The dossier of amendments is produced and stored in a structured way (i.e. JSON format).
3. The ordering algorithm, based on pattern matching and AI, is executed on the dossier of amendments; it produces, as output, a new JSON file representing the dossier of amendments ordered according to voting order.
4. It may be convenient for business units to have a drag-and-drop window for minor modifications to the ordering.
5. The business units keep working on the dossier of amendments (legislative drafting and inadmissibility speeches).

Expected results:

- It takes less time to order the dossier of amendments according to voting order.

Potential challenges:

- Strong collaboration is needed between the IT Department and business units in order to have clear documentation regarding ordering rules.
- It may be necessary to periodically retrain the model, so the potential use of MLOps should be evaluated.
- The ordering produced might not be 100% accurate, so it may be convenient for business units to have a drag-and-drop window for minor modifications that may be needed on the dossier.

Data requirements:

- Structured representation of the dossier of amendments (i.e. JSON format)
- Amendment texts and metadata stored inside a database

Integrations with other systems:

- Database containing amendments texts and metadata
- Software application used for legislative drafting and for other procedural tasks on amendments

Success metrics:

- Time needed to order the dossier
- The difference between the time needed to automatically order the dossier and the time that would have been needed for the ordering without using the algorithm
- The percentage of amendments manually moved using the drag-and-drop window after the execution of the ordering algorithm
- Colleague satisfaction scores

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Computation of amendment similarity scores

Use case ID: 005
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Generate evidence about which amendments are similar to each other and the degree of similarity between them.

Actors:
- Business units
- Dossier of amendments

Prerequisites:
- Amendments stored in a structured way inside a database
- Dossier of amendments stored in a content management system

Scenario:
1. The amendments are submitted by MPs, received by offices, stored in a structured way inside a database, numbered according to presentation time and ordered according to voting order.
2. The dossier of amendments is produced and stored in a structured way (i.e. JSON format).
3. The similarity algorithm, based on semantic distance computation, is executed. For each amendment, it returns a list of amendments having a similarity score higher than a predetermined threshold. The similarity score is also shown for each item in the list.
4. The business units keep working on the dossier of amendments (legislative drafting and inadmissibility speeches), with evidence of similarities between amendments.

Expected results:
- It takes less time to manage the dossier of amendments (i.e. the writing of inadmissibility speeches).

- A situation where amendments that have similar content are managed differently is avoided.

Potential challenges:

- There could be a few false positives; human checks are therefore needed.

Data requirements:

- Structured representation of the dossier of amendments (i.e. JSON format)
- Amendment texts and metadata stored inside a database

Integrations with other systems:

- Database containing amendment texts and metadata
- Software application used for legislative drafting and for other procedural tasks on amendments

Success metrics:

- Time needed to write inadmissibility speeches
- Improved response time in terms of identifying similar amendments
- Colleague satisfaction scores

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic production of summary notes for dossiers related to bills

Use case ID: 009
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Create notes for dossiers related to bills by using large language models (e.g. Llama 2).

Actors:
- Business units

Prerequisites:
- Existing database of bills
- Existing content management systems for bills

Scenario:
1. The user selects a bill to be used as input.
2. The AI model is executed on the input bill.
3. The AI model returns informative notes regarding the input bills.
4. The notes are proposed to the user.
5. The user can evaluate the quality of the notes; the notes can be used as a support for producing parliamentary documentation.

Expected results:
- User satisfaction in producing parliamentary documentation is improved.
- It takes less time to produce parliamentary documentation.

Potential challenges:
- Ensuring the AI tool provides accurate and relevant responses

Data requirements:
- Existing database of bills

- Existing content management systems for bills

Integrations with other systems:

- Database of bills
- Content management systems for bills
- Software used by colleagues to produce parliamentary documentation

Success metrics:

- User satisfaction scores
- Reduction in the time needed to produce parliamentary documentation

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Distribution of demands from MPs among groups of lawmaking experts

Use case ID: 019
Author: Chamber of Deputies of Brazil
Date: 14 June 2024

Objective:

Read the text of demands sent by MPs to the Legislative Consultancy Department for new bill drafting or research to support new bills, interpret this text, and suggest up to three groups of lawmaking experts who could handle the demand.

Actors:

- MPs submitting demands
- Legislative Consultancy Department experts (lawmaking experts)
- Legislative Consultancy Department staff
- AI system for screening and distributing demands from MPs

Prerequisites:

- Demand distribution rules
- Trained AI model for demand classification
- Integration with digital services commonly used by MPs and legislative consultants

Scenario:

1. When an MP wants a bill drafting or needs research to support a new bill, they send a demand to the Legislative Consultancy Department, which comprises a fixed number of groups of lawmaking experts.

2. The AI model semantically analyses the demand and, according to the blend of its themes and approaches, suggests up to three groups of lawmaking experts that have a high probability of being appropriately skilled to handle the task.
3. A Legislative Consultancy Department staff member checks the AI-generated suggestions and authorizes the demand to be distributed.
4. A lawmaking expert handles the demand after it is distributed to their group.

Alternate flows:

- When one of the AI model's suggestions is greater than 90%, the demand will be distributed automatically.

Expected results:

- The process of distributing demands among consultancy groups is more efficient.
- Bias in the distribution of demands is reduced.
- Workload for Legislative Consultancy Department staff is reduced.

Potential challenges:

- Ensuring the AI model provides accurate responses
- Monitoring changes in demand distribution rules
- Monitoring changes in the lawmaking groups

Data requirements:

- Historical demand distribution data for AI model training
- Periodic verification of AI model accuracy

Integrations with other systems:

- Digital services commonly used by MPs and legislative consultants
- Analytics and reporting tools

Success metrics:

- Percentage of demands correctly classified by the AI model (Top-1 accuracy)

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Retrieval of relevant documents for the lawmaking expert handling an MP's demand

Use case ID: 020
Author: Chamber of Deputies of Brazil
Date: 14 June 2024

Objective:
Read the text of demands sent by MPs to the Legislative Consultancy Department for new bill drafting or research to support new bills, interpret this text, and present to the lawmaking expert the 12 (or more) most relevant documents (e.g. existing bills, previous demands) that are similar in subject to the demand.

Actors:
- MPs submitting demands
- Legislative Consultancy Department experts (lawmaking experts)
- AI system for retrieving relevant documents similar to the subject of an MP's demand

Prerequisites:
- Database of textual documents to search, such as existing bills and previous demands
- Automated document indexing or vectorization process, including proper tokenization and semantic representation
- Database to store user-relevance feedback needed to improve future searches
- Integration with digital services commonly used by MPs and legislative consultants

Scenario:
1. The lawmaking expert selects an MP's demand.
2. The AI system generates a query for document searching, focusing on the subject of the demand. This query can be enhanced with contextual information, including relevant laws and bill citations, to improve accuracy and relevance.

3. The AI system searches the database for documents relevant to the generated query.
4. The AI system presents to the lawmaking expert a list of 12 (or more) documents, ranked by similarity to the subject of the demand. The ranking takes into account previous feedback on similar requests.
5. The lawmaking expert evaluates each proposed document and gives relevance feedback.

Alternate flows:

- When necessary, the lawmaking expert can inform the system about relevant documents not included in the list provided via the AI system interface.

Expected results:

- The process of searching for relevant documents to handle a given demand is more efficient.
- Less time is needed for law drafting.
- The relevance of AI system results is continuously enhanced through the accumulation of feedback over time.

Potential challenges:

- Ensuring continuous improvement of the AI system over time
- Encouraging users to provide relevance feedback

Data requirements:

- The content of laws and bills must be available in text format
- Adhere to the requirements applicable to the consulted documents, with particular attention to confidentiality
- Periodic verification of AI system performance

Integrations with other systems:

- Digital services commonly used by MPs and legislative consultants
- OCR tool for extracting text from images, PDFs and other formats
- Analytics and reporting tools

Success metrics:

- Recall: proportion of relevant documents that are successfully retrieved by the system
- Precision: proportion of retrieved documents that are relevant to the query
- R-precision: precision at the point where the number of retrieved documents equals the number of relevant documents for a given query
- Volume of searches conducted on the AI system
- Amount of relevance feedback provided by users of the AI system

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Semantic clustering of amendments

Use case ID: 021
Author: Chamber of Deputies of Brazil
Date: 14 June 2024

Objective:
Read amendments proposed by MPs for a specific bill, interpret them, and group them according to semantic similarity.

Actors:
- MPs
- Lawmaking experts advising MPs
- AI system designed for semantic clustering, optionally integrated with named-entity recognition and a document retrieval system

Prerequisites:
- Automated text indexing or vectorization process, encompassing proper tokenization and semantic representation
- Database to store user feedback needed to improve the AI system
- Integration with digital services commonly used by MPs and lawmaking experts

Scenario:
1. MPs present their amendments to a bill.
2. The AI system semantically analyses the presented amendments and generates clusters of amendments that share similarities in terms of meaning or impact on the bill.
3. An MP or a lawmaking expert selects the bill to view the clusters generated by the AI system.
4. The AI system offers graphical and list-based visualizations of the amendment clusters. Examples of graphical resources include word clouds and 3D spatial distributions of the amendments.
5. An MP or lawmaking expert provides feedback on the AI-generated clusters.

Alternate flows:

- When necessary, the user can adjust the number of clusters the AI system generates.
- Sometimes, lawmaking experts prefer to define specific named groups and request that the AI system assign the amendments to these groups. In this scenario, the AI system should utilize a document retrieval system that assesses the similarity of the amendments with these predefined groups.

Expected results:

- The process of analysing and categorizing similar amendments is more efficient.
- AI system results are continuously enhanced through the accumulation of feedback over time.

Potential challenges:

- Ensuring continuous improvement of the AI system over time
- Addressing performance and memory issues during sentence vectorization (text embeddings) and cluster reduction
- Encouraging users to provide feedback

Data requirements:

- New amendments to a given bill require the recreation of the corresponding clusters
- Periodic verification of AI system performance

Integrations with other systems:

- Digital services commonly used by MPs and lawmaking experts
- Analytics and reporting tools

Success metrics:

- Amount of feedback provided by users of the AI system
- Visual inspection, a qualitative technique, allows for the visualization of clustering results using 2D or 3D graphics

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Document summarization for enhanced accessibility and comprehension

Use case ID: 026
Author: Senate of Italy
Date: 12 June 2024

Objective:
Provide users with concise and accurate summaries of legislative bills and other parliamentary documents using artificial intelligence (AI)-powered summarization, enhancing the accessibility and comprehension of complex information.

Actors:
- Senate website users (citizens, researchers and journalists)
- Senate IT and web development team

Prerequisites:
- Existing database of legislative bills and other parliamentary documents
- Trained large language model (LLM)-based AI model for text summarization
- Internet accessibility for users

Scenario:
1. The user accesses the Senate website.
2. The user searches for a specific legislative bill or parliamentary document.
3. The system retrieves the full text of the document from the database.
4. The user requests a summary of the document (e.g. “Provide a summary of this bill on education reform.”).
5. The LLM-based AI model processes the document and generates a concise summary highlighting key points, objectives and implications.
6. The summary is displayed to the user in an easy-to-read format.
7. The user can ask follow-up questions or request more detailed information on specific sections.
8. The system logs the request and the generated summary for continuous improvement of the application.

Alternate flows:

- If the document is too complex or lengthy for an immediate summary, the system may take additional processing time and inform the user.
- If the user requests summaries for multiple documents, the system processes each request sequentially and provides summaries one by one.

Expected results:

- User satisfaction is improved owing to quick and accurate summaries of complex documents.
- Accessibility and understanding of legislative and parliamentary content are increased.
- It takes less time and effort for users to comprehend lengthy documents.
- Engagement with the Senate website and its resources is improved.

Potential challenges:

- Ensuring the LLM-based AI model can accurately summarize diverse types of documents
- Handling documents with legal language, or with multiple sections and amendments
- Continuously updating the LLM-based AI model to adapt to new types of documents and legislative language

Data requirements:

- Database of current legislative bills and other parliamentary documents

Integrations with other systems:

- Existing Senate website infrastructure
- LLM-based AI processing systems and models
- User interface components for displaying summaries

Success metrics:

- Query response time
- User satisfaction ratings and feedback
- Accuracy and relevance of the generated summaries

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Extraction and marking of legal references

Use case ID: 027
Author: Senate of Italy
Date: 12 June 2024

Objective:
Automatically extract and mark legal references within parliamentary documents, improving the accuracy and efficiency of legal research and documentation, and allowing users to easily access related documents.

Actors:
- Senate legal researchers and analysts
- Senate IT and web development team
- Users of the Senate website (citizens, researchers and journalists)

Prerequisites:
- Existing database of parliamentary documents
- Trained artificial intelligence (AI) model for extracting legal references
- Markup language or tagging system for highlighting references in documents
- Internet accessibility for users

Scenario:
1. The user accesses a parliamentary document on the Senate website.
2. The user initiates the extraction process by clicking a button or issuing a command.
3. The AI model processes the document to identify and extract legal references (e.g. citations of laws, articles and/or regulations).
4. The extracted references are marked within the document using a predefined markup language or tags.
5. The system provides all identified legal references.
6. The user can click on marked references to view additional details or related documents.

Alternate flows:
- For documents with a high density of references, the system may offer segmented processing to improve accuracy.

Expected results:

- Accuracy and efficiency in identifying legal references within parliamentary documents are improved.
- The usability of parliamentary documents for legal researchers and analysts is enhanced.
- The time and effort required for manual extraction and marking of references is reduced.
- Reliability and consistency in legal documentation are increased.

Potential challenges:

- Ensuring the AI model can accurately identify diverse legal references across different types of documents
- Handling documents with complex legal language or formatting

Data requirements:

- Historical documents with annotated legal references for training and improving the AI model
- Current database of parliamentary documents and legal texts

Integrations with other systems:

- Existing Senate website infrastructure
- AI processing systems and models
- Markup language or tagging system for highlighting references

Success metrics:

- Accuracy rate of extracted legal references
- User satisfaction ratings and feedback
- Reduction in time spent on manual reference extraction and marking
- Consistency and reliability of marked references across different documents
- Reduced frequency of calls to the help-desk service for incorrect references

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Modification of the text of a law following the approval of an addition or amendment

Use case ID: 034
Author: Senate of Italy
Date: 12 June 2024

Objective:
Generate the modified version of a legal text using generative AI following the application of an addition or amendment, producing a “side-by-side text” that adheres to the Senate’s drafting rules.

Actors:
- Senate users (e.g. documentalists and legislative drafters)

Prerequisites:
- Basic knowledge of computer tools by Senate users
- Knowledge of the drafting rules for “side-by-side texts”

Scenario:
1. A Senate documentalist selects the original legislative text to be modified.
2. The documentalist applies the desired modification (addition or amendment) using a generative AI service.
3. The AI service processes the original text and the specified modification to produce the updated version of the legal text.
4. The documentalist compares the original text with the modified version to ensure the accuracy of the applied changes.
5. The AI service generates a visualization of the “side-by-side text”, displaying the original and modified versions according to the Senate’s precise drafting rules.
6. The documentalist reviews the “side-by-side text” for any discrepancies and finalizes the document.

Alternate flows:

- If multiple modifications affect the same section, the AI service prioritizes based on predefined rules or seeks user input for resolution.
- If the AI service has applied the modifications incorrectly, the documentalist can manually adjust the changes or reprocess the text using the AI service.

Expected results:

- The “side-by-side text” closely matches the manually created version, maintaining high fidelity to the Senate’s drafting standards.
- Efficiency in producing legally accurate and formatted texts is increased, with reduced manual effort.

Potential challenges:

- Ensuring high precision in the application of modifications to avoid errors in the legal text
- Resolving conflicts when multiple modifications affect the same section of the text, determining the correct order of application
- Managing iterative validation where user confirmation is required for each change, which can be time-consuming

Data requirements:

- The original legislative text and the specific modifications (additions or amendments) to be applied
- Historical “side-by-side texts” to train the AI model on the correct formatting and drafting rules

Integrations with other systems:

- Potential integration with legislative drafting tools and databases for seamless retrieval and application of modifications

Success metrics:

- Low rate of hallucinations (inaccuracies or fabrications by the AI)
- High level of matching to “side-by-side texts” created without generative AI
- User satisfaction scores from Senate documentalists and legislative drafters
- Reduction in the time required to produce modified legislative texts compared to traditional methods

The *Use cases for AI in parliaments* collection is published by the IPU’s Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub’s project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project’s implementation. Please note that this use case is provided “as is” and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Amendment and legislative text similarity assessment tool

Use case ID: 036
Author: Senate of Italy
Date: 12 June 2024

Objective:
Assess the degree of similarity among legislative texts and group them into clusters based on their similarities.

Actors:
- Senate users (e.g. documentalists and legislative analysts)

Prerequisites:
- Basic knowledge of computer tools
- Domain-specific knowledge of legislative texts and related documents

Scenario:
1. A Senate documentalist selects a series of texts of the same type, such as legislative articles or amendments.
2. The user employs an application that analyses the selected texts and groups them into clusters based on their similarity.
3. The documentalist reviews the resulting clusters to ensure they meet the chosen similarity metric and are logically grouped.

Alternate flows:
- If the initial clustering results are unsatisfactory, the documentalist can adjust the similarity parameters or criteria and reprocess the texts.

Expected results:
- Similar legislative texts are grouped accurately according to the defined similarity metrics.
- Clustering results are consistent, with minimal changes in the number and size of clusters as the set of documents evolves.

Potential challenges:

- Ensuring users understand the concept and implementation of the similarity metric
- Adapting similarity algorithms to the specific characteristics and requirements of legislative texts
- Handling large volumes of text efficiently without compromising accuracy

Data requirements:

- A comprehensive set of legislative texts for comparison (e.g. articles and amendments)
- Historical clustering results to fine-tune and validate the similarity algorithms

Integrations with other systems:

- Potential integration with legislative databases and document management systems for seamless retrieval and processing of texts

Success metrics:

- Stability of clusters in terms of number and size across subsequent iterations
- Similarity metrics that are transparent and understandable to end users
- High user satisfaction with the accuracy and usefulness of the clustered groupings

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic sequencing of the voting order on amendments

Use case ID: 037
Author: Senate of Italy
Date: 12 June 2024

Objective:
Determine the precise and most efficient order for voting on amendments in the chamber.

Actors:
- Senate documentalists

Prerequisites:
- Basic knowledge of computer tools
- Domain-specific knowledge of amendments and the rules governing the voting order

Scenario:
1. Senate documentalists select a set of amendments pertaining to a text under discussion.
2. The documentalists use an AI application to calculate the voting order based on predefined rules and criteria.
3. The documentalists review the calculated voting order and make minimal manual adjustments as necessary, taking into account political evaluations and considerations.
4. The finalized voting order is prepared for presentation and use in the chamber.

Alternate flows:
- If the initial calculation does not meet expectations, documentalists can adjust the parameters or criteria and recalculate the voting order.

Expected results:
- Amendments are sequenced according to the anticipated voting order in the Senate.

- The calculation process is precise and efficient, minimizing the need for manual adjustments.

Potential challenges:

- Handling poorly formatted amendments that may disrupt the calculation process
- Managing an abnormal number of amendments, which could overwhelm the system
- Preventing the AI algorithms from introducing hallucinations or inaccuracies in the voting order

Data requirements:

- The full set of amendments to be sequenced

Integrations with other systems:

- Potential future integration with legislative management systems for streamlined processing and retrieval of amendments

Success metrics:

- Minimal number of manual adjustments required to finalize the voting order
- High accuracy and efficiency in the calculated voting order
- User satisfaction with the precision and reliability of the AI-generated voting order

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Drafting of amendments to legislative texts

Use case ID: 038
Author: Senate of Italy
Date: 12 June 2024

Objective:
Assist parliamentary staff in drafting amendments to legislative texts, utilizing artificial intelligence (AI)-powered large language models (LLMs) to ensure accuracy, consistency and compliance with legislative standards.

Actors:
- Parliamentary staff members
- Legislative drafting committee
- IT support team

Prerequisites:
- Access to trained AI LLM models familiar with legislative language and structure
- Integration with legislative drafting and document management systems
- Comprehensive database of existing legislative texts and amendments for reference
- Adherence to legal and procedural standards for legislative drafting

Scenario:
1. A parliamentary staff member identifies a section of a legislative text that requires an amendment.
2. The staff member inputs the original text and the proposed changes into the AI LLM system.
3. The AI LLM system analyses the proposed changes, ensuring they align with legal standards and legislative language.
4. The AI LLM system generates a draft of the amendment, incorporating the proposed changes accurately.
5. The draft amendment is reviewed by the legislative drafting committee for legal and procedural compliance.
6. The final version of the amendment is formatted and integrated into the legislative text.

7. The system logs the drafting activity for future reference and analysis.

Alternate flows:
- None

Expected results:
- Efficiency and accuracy in drafting legislative amendments are enhanced.
- The turnaround time for drafting and reviewing amendments is shortened.
- Resources are better allocated, allowing legal staff to focus on more complex legislative tasks.

Potential challenges:
- Ensuring the AI LLM system maintains high accuracy in legal language and structure

Data requirements:
- Comprehensive database of legislative texts and previous amendments
- Legal glossaries and references to ensure accurate language and terminology
- Historical records of legislative drafting activities

Integrations with other systems:
- Legislative document management system (LDMS)
- Legal workflow automation tools
- Secure data storage solutions
- User authentication and access control systems

Success metrics:
- Accuracy rate of drafted amendments
- Average time taken to draft and review amendments
- User satisfaction scores
- Reduction in the backlog of amendment requests
- Percentage of amendments requiring minimal human intervention

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Entity recognition and tagging in legislative texts

Use case ID: 039
Author: Senate of Italy
Date: 12 June 2024

Objective:
Automatically identify and tag relevant entities such as people, organizations, locations, dates and legal references within legislative texts, thereby enhancing the efficiency and accuracy of legal document analysis and research.

Actors:
- Parliamentary staff members
- Artificial intelligence (AI) development and support team

Prerequisites:
- Access to a comprehensive dataset of legislative texts
- Pre-trained language models specialized in legal text
- Integration with parliamentary document management systems
- Defined user access permissions and roles

Scenario:
1. A parliamentary staff member uploads a legislative document to the system.
2. The AI system processes the document using natural language processing (NLP) techniques.
3. The AI system identifies and tags relevant entities such as names of legislators, dates, legal references and specific terms.
4. The tagged document is reviewed by the legal analyst for accuracy.
5. The document, now enriched with metadata, is stored in the parliamentary document management system.
6. MPs and other authorized users can search and retrieve documents based on tagged entities, facilitating quicker access to relevant information.

Alternate flows:
- If the uploaded document format is not supported, the system prompts the user to convert the document into a supported format.

- In case of ambiguity or low-confidence tags, the system flags these instances for manual review and correction by the legal analyst.

Expected results:

- Accuracy and speed in legal text analysis are enhanced.
- Searchability and retrieval of legislative documents are improved.
- Manual workload for legal analysts is reduced.
- MPs make better-informed decisions through quick access to relevant information.

Potential challenges:

- Ensuring the AI system accurately identifies and tags entities in complex legal language
- Handling variations and updates in legal terminology and references
- Integrating the AI system seamlessly with existing document management systems
- Addressing concerns related to data privacy and security

Data requirements:

- Historical legislative documents for model training
- Annotations of legal entities for supervised learning
- Continual updates of legal texts and terminologies to refine the model

Integrations with other systems:

- Parliamentary document management system
- Legal databases for cross-referencing
- User authentication and access control systems

Success metrics:

- Accuracy rate of entity recognition and tagging
- Reduction in time taken for legal analysts to annotate documents
- Increase in the number of successful searches for tagged entities
- User satisfaction scores from parliamentary staff and researchers

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Bill drafting assistant

Use case ID: 048
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Foster the integral and efficient creation of bills through the integration of multiple AI-based assistants, achieving analysis of quorum rating, admissibility, related norms and regulatory impact, among others.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians

Prerequisites:
- XML database
- Literal transcripts of sessions
- Appropriate prompts
- System to integrate the tool into its production phase

Scenario:
1. The parliamentarian accesses a platform that, through the integration of all legislative area assistants, allows for the generation and analysis of a new bill, enabling admissibility, quorum rating, related norms and possible improvements to be determined.

Expected results:
- The time required to produce and analyse bills is reduced.
- Comprehensive, relevant and coherent bills are obtained, and these bills align with the stated objectives.
- The contextual background, implications and side effects of the analysed bill are obtained.

Potential challenges:

- Integrity of the response and legal precision
- Bias limitations
- Mis-interpreted response because the tool does not understand the context of relevant laws
- Corporate responsibility exemption, ensuring the information provided is fully informative
- Need for human validation at all times
- Use of the tool for unintended purposes
- Blaming of the tool for the content it generates
- Excess or contradiction of biases
- Delegation of task completeness to the LLM

Data requirements:

- Vectorized regulation
- Updated database for assistant consumption
- LLM's own knowledge

Integrations with other systems:

- Systems for creating, manipulating, storing or generating legal texts to achieve the defined objective in this use case

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Quorum rating assistant

Use case ID: 051
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Determine the type of quorum according to legal regulations and the Constitution.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians
- Officials

Prerequisites:
- XML database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- System to integrate the tool into its production phase

Scenario:
1. Users access a system that allows them to enter a bill or motion, and the system proposes a constitutionality status. If a quorum is required, the system indicates the specific type.

Expected results:
- The quorum condition of a bill is delivered.

Potential challenges:
- Integrity of the response and legal precision
- Bias limitations
- Mis-interpreted response because the tool does not understand the context of relevant laws

- Corporate responsibility exemption, ensuring the information provided is fully informative
- Need for human validation at all times
- Extraction of information from case law
- Extraction of information from other State bodies

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to documents or files peripheral to the national legal framework
- LLM's own knowledge

Integrations with other systems:

- Parliamentary service system (PORTAL)
- Management systems for senior corporate management

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Argumentation assistant

Use case ID: 053
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Argue or counter-argue based on a legislative text.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the Covid-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians
- Officials

Prerequisites:
- Database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. Users receive argumentative support to craft comprehensive and robust proposals, thus improving the quality of the debate.

Expected results:
- The integrity of the arguments and foundations of the proposals to be debated is improved.
- Users can experiment on generated arguments with and without biases.

Potential challenges:
- Use of the tool for unintended purposes
- Blaming of the tool for the content it generates

- Excess or contradiction of biases
- Delegation of task completeness to the LLM
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to documents or files peripheral to the national legal framework
- Motions and bills under discussion
- LLM's own knowledge

Integrations with other systems:

- Parliamentary service system (PORTAL)
- Management systems for senior corporate management

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Admissibility assistant

Use case ID: 054
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Determine the admissibility of a bill.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians
- Officials

Prerequisites:
- Database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. Users receive advice or background information to determine the admissibility of a motion or bill.

Expected results:
- An admissibility study and its argumentation are received accurately and quickly.

Potential challenges:
- Blaming of the tool for the content it generates
- Delegation of task completeness to the LLM
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to documents or files peripheral to the national legal framework
- Motions and bills under discussion
- LLM's own knowledge

Integrations with other systems:

- Parliamentary service system (PORTAL)
- Management systems for senior corporate management

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Regulatory impact assistant

Use case ID: 057
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Assist in improving, optimising or amending a motion or bill for legal correctness and feasibility.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians
- Officials involved in the evaluation of the law

Prerequisites:
- Database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. The parliamentarian or official receives automated feedback from the LLM, indicating improvements, errors or contradictions, along with various comments resulting from the relationship between the bill in question and the background information that makes up the LLM's knowledge base.

Expected results:
- Parliamentarians present bills or motions of higher quality and legal integrity.

Potential challenges:
- Integrity of the response and legal precision

- Bias limitations
- Mis-interpreted response because the tool does not understand the context of relevant laws
- Corporate responsibility exemption, ensuring the information provided is fully informative
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to legislative power but not part of the set to be consulted
- LLM's own knowledge

Integrations with other systems:

- Parliamentary service system (PORTAL)
- Administration systems for senior corporate management

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Parliamentary debate assistant

Use case ID: 058
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Understand the content, arguments, opinions, literal statements, outcomes, votes, interventions, etc. of historical debates held in the Chamber of Deputies.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians
- Officials

Prerequisites:
- Database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- Appropriate prompt
- Transcripts of sessions, structured by intervention, content, or atomic structures for vector storage
- System to integrate the tool into its production phase

Scenario:
1. Both parliamentarians and officials interested in political activities in the chamber can access an assistant capable of answering a wide range of questions related to historical debates.

Expected results:
- Current and future motions and bills are enriched in light of past debates.
- Voting outcomes for previously presented bills are considered during the formulation of new proposals.

- The results of technical, political or regulatory feasibility assessments for previously presented proposals are considered during the formulation of new proposals.

Potential challenges:
- Need for human validation at all times

Data requirements:
- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to documents or files peripheral to the national legal framework
- Motions and bills under discussion
- LLM's own knowledge
- Transcripts of sessions converted into LLM-consumable structures

Integrations with other systems:
- Management and administration systems for senior corporate management
- Legislative proposal generation or parliamentary support systems

Success metrics:
- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-powered MP attendance monitoring and real-time quorum calculation with advanced visualizations

Use case ID: 052
Author: Council of Representatives of Bahrain
Date: 6 October 2024

Objective:

Automatically track and analyse MP attendance within the parliamentary chamber using high-spec cameras and artificial intelligence (AI), visualize their seating on a seating map, and calculate quorum in real-time. This system enhances transparency, efficiency and legislative processes by ensuring quorum is met for parliamentary sessions.

Actors:

- Parliamentary staff members
- MPs
- Chamber security and protocol staff
- AI development and support team

Prerequisites:

- Installation of high-spec cameras in the parliamentary chamber, positioned to cover the entire seating area
- Access to real-time video feeds from the cameras
- AI models pre-trained for facial recognition, attendance tracking and quorum calculation
- Integration with the parliament's seating chart and attendance records
- Pre-defined quorum requirements based on parliamentary rules

Scenario:

1. High-spec cameras are installed in the parliamentary chamber to capture real-time video of MPs during sessions.

2. During a parliamentary session, the AI system analyses the video feeds in real time, identifying MPs using facial recognition and tracking their attendance.
3. The system cross-references the identified MPs with the parliament's seating chart to map their exact seating positions within the chamber.
4. As MPs are identified and attendance is tracked, the system continuously updates a live quorum count, ensuring that the required number of MPs for the session are present.
5. The AI system generates an interactive seating map displaying which MPs are present, absent or late based on real-time analysis, along with the current quorum status.
6. If quorum is met, the system visually indicates that proceedings can continue. If quorum is not met, the system alerts staff and provides real-time updates as more MPs arrive.
7. After the session, parliamentary staff members review the attendance data and quorum logs for accuracy and make any necessary adjustments.
8. The attendance data, seating visualization and quorum calculations are stored for future reference, allowing MPs, staff and authorized users to view attendance history and quorum trends.
9. The system can generate reports on MP attendance and quorum adherence over time, highlighting patterns and discrepancies.

Alternate flows:

- If a camera feed is interrupted or a seat is not clearly visible, the system flags the issue and prompts staff to manually verify attendance for the affected MP(s).
- MPs who are not recognized by the AI system due to facial obstructions or other factors are manually logged by staff for attendance and quorum calculations.
- In case of any seating changes or rearrangements, the seating chart is updated, and the system adjusts its analysis and quorum calculations accordingly.

Expected results:

- Enhanced accuracy and efficiency in tracking MP attendance and calculating quorum in real time using AI-powered analysis
- Improved transparency in parliamentary operations with visual representation of seating, attendance and quorum status
- Reduced manual workload for parliamentary staff responsible for attendance tracking, quorum monitoring and report generation
- Faster and more reliable quorum calculations, ensuring parliamentary sessions proceed only when quorum is met

Potential challenges:

- Ensuring accurate identification of MPs using facial recognition, particularly in cases of poor lighting or obstructions
- Maintaining privacy and security while processing real-time video feeds for attendance tracking and quorum calculation
- Handling seating changes, special sessions, or unexpected technical issues with camera feeds

- Adjusting quorum calculations in real time if MPs temporarily leave and return to the chamber during sessions

Data requirements:

- Real-time video feeds from high-spec cameras covering the entire parliamentary chamber
- Pre-trained AI models for facial recognition, attendance tracking and quorum calculation
- Up-to-date seating charts of MPs
- Quorum rules and attendance thresholds for parliamentary sessions
- Attendance records for reference and report generation

Integrations with other systems:

- Parliamentary seating and attendance management systems
- Quorum management systems, if available
- User authentication and access control systems
- Video feed management systems for processing and storing the video data

Success metrics:

- Accuracy rate of MP attendance identification and quorum calculations
- Reduction in time spent manually tracking, reporting attendance and calculating quorum
- Increased transparency and operational efficiency through real-time quorum monitoring
- User satisfaction scores from parliamentary staff and MPs

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Transcription and translation

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic subtitling of assembly sessions for WebTV

Use case ID: 003
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Produce, in real time, the subtitles of speeches during assembly sittings. The subtitles are embedded inside the video signals published by WebTV.

Actors:
- ASR subtitling system
- WebTV users

Prerequisites:
- Existence of an audio signal of assembly speeches
- Existence of a video signal of the assembly
- Existence of a pre-trained subtitling model

Scenario:
1. The audio signal of assembly speeches flows into the ASR subtitling system in real time.
2. The ASR subtitling system produces the subtitles in real time without human intervention.
3. The subtitles are embedded with the video signal of the assembly.
4. The video signal is shown on WebTV. Users can enable/disable the subtitles.

Expected results:
- The subtitles of assembly speeches are produced in real time and without human intervention, so they can be shown on WebTV.

Potential challenges:
- ASR model not properly trained
- The ASR model might not work well with dialects and specific terms not used during the training phase (e.g. the term “COVID-19” was used a lot during the pandemic period, but it was unknown before)

Data requirements:

- The ASR model should be trained on a large dataset of verbatim reports of sittings. In general, it should be trained on a large dataset of speeches and words in the desired language.

Integrations with other systems:

- System that produces the audio signal of the assembly
- System that produces the video signal of the assembly
- WebTV

Success metrics:

- Time needed to produce the subtitles
- Delay between the audio/video signal of the assembly and the corresponding subtitles

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic transcription of handwritten manuscripts from historical archives

Use case ID: 006
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Produce textual transcriptions of handwritten manuscripts from historical archives.

Actors:
- Business units
- Manuscripts of historical archives

Prerequisites:
- Manuscripts of historical archives scanned in a digital format (e.g. in .png format) as training data
- A deep learning model trained on the training data

Scenario:
1. The input images, corresponding to pages of historical archives, are passed through the deep learning model.
2. The deep learning model identifies the rows of handwritten text in the manuscript.
3. The deep learning model transcribes each row and produces the corresponding texts.
4. The texts are shown to the user and are stored in .txt format and .pdf format.

Expected results:
- It takes less time to transcribe handwritten manuscripts from historical archives.
- It takes less time to digitize the manuscripts.
- The manuscripts are provided in digital format.

Potential challenges:

- The deep learning model needs to be robust enough to manage noise in the scanned manuscript pages (damaged paper, ink spots, etc.).
- Avoid overfitting in order to avoid loss of generality. The deep learning model might be overly fitted to the handwriting of the person who wrote the manuscript.

Data requirements:

- Scanned images (e.g. in .png format) of pages of manuscripts from historical archives

Integrations with other systems:

- Software application used to manage historical archives

Success metrics:

- Time needed to transcribe a page
- Time needed to transcribe the whole manuscript
- The number of characters that are transcribed incorrectly
- The number of words that are transcribed incorrectly
- The number of sentences that are transcribed incorrectly

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-powered verbatim records system (HANS)

Use case ID: 016
Author: Riigikogu (The Estonian Parliament)
Date: 5 June 2024

Objective:
Reduce the need for human labour (stenographers) at sittings of the Riigikogu (The Estonian Parliament) and automate the working process; and assist in the preparation of committee minutes. Both outputs are reviewed by staff members (editors, committee advisers) and processed further if necessary.

Actors:
- Members of parliament
- Editors and committee officials
- HANS verbatim records system
- Document and procedure information system
- Voting information system

Prerequisites:
- High-quality audio recording system (part of the HANS system)
- Well-trained speech-to-text system of sufficient quality (error rate less than 10%, part of the HANS system)
- Willingness to give part of the work to the AI system

Scenario:
1. The voice recording system records all the speeches and sends 10-minute clips to the speech-to-text system.
2. The AI speech-to-text system produces a draft transcript, identifies the speaker and sends all the prepared data to the main system.
3. For plenary sittings, the system automatically:
    a. prepares a text according to the speakers, based on the texts obtained from the different audio segments
    b. adds the necessary punctuation marks and the names of the speakers
    c. adds the agenda items according to the information received from the document management system
    d. adds the links to the votes, taken from the voting information system

   e. adds YouTube links to each agenda item and time codes of speeches.
4. Editors review the text prepared by the system and make the necessary corrections; the transcript is then automatically published in the same system on the website of the Riigikogu.
5. For committee meetings, committee officials upload a pre-recorded, high-quality audio file to the system, and the system then automatically:
   a. prepares a single text according to the speakers, based on the texts obtained from the different audio segments
   b. adds the necessary punctuation marks and the names of the speakers.
6. Committee officials review the received text, make the necessary changes and prepare the minutes of the committee.

Alternate flows:

- The system allows for the manual production of a transcript without speech recognition.

Expected results:

- The need for human labour is reduced.

Potential challenges:

- The speech-to-text language model needs to be expanded with new words from time to time, and needs additional training.

Data requirements:

- Sufficient training material is essential.

Integrations with other systems:

- There is no direct need for integration, although any kind of integration makes the entire system more automated and further reduces the need for human labour.

Success metrics:

- The speech-to-text error rate is less than 10%.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Speech-to-text transcription

Use case ID: 022
Author: Chamber of Deputies of Brazil
Date: 14 June 2024

Objective:
Transcribe recorded audio or video files into text, which is indispensable for supporting various parliamentary functions such as maintaining official records of parliamentary speeches, and transcribing public hearings, meetings, interviews and other proceedings.

Actors:
- Stenographers
- Audio operators or clerk staff
- Communication unit staff
- AI system proficient in speech-to-text transcription

Prerequisites:
- AI model trained for speech-to-text transcription, optionally integrated with diarization and speaker recognition services
- Rules followed by stenographers
- Integration with digital services commonly used by users, such as stenographers, audio operators, clerk staff and communication unit staff

Scenario:
1. When a new parliamentary meeting is recorded in audio or video, the AI system transcribes its contents into text.
2. The audio operators or clerk staff use the appropriate digital service to ensure accurate recording of speaker identification, time codes and other metadata for the captured speeches.
3. The AI system combines the transcribed text with the recorded metadata (e.g. speaker identification) to generate a preliminary diarized transcript.
4. Stenographers review and correct portions of the preliminary diarized transcript to produce the official record of the parliamentary meeting for publication.

Alternate flows:

- When a new interview is recorded in audio or video, the AI system transcribes its contents into text. Communication unit staff can then revise and correct the resulting transcript before publication or distribution.

Expected results:

- The process of transcribing speech to text is more efficient.
- Workload for stenographers and other potential users is reduced.

Potential challenges:

- Ensuring the AI model accurately transcribes speeches involves recognizing acronyms and idioms, and adhering to official recording rules
- Detecting potential deterioration in the performance of the AI system over time

Data requirements:

- Historically recorded speech texts can be used to enhance the performance of AI models
- Periodic verification of AI model performance

Integrations with other systems:

- Digital services used by the users
- Diarization service
- Speaker recognition service
- Analytics and reporting tools

Success metrics:

- Word error rate (WER)
- Recognition time
- Speaker diarization accuracy
- Volume of transcripts assisted by the AI system

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automatic transcription of parliamentary sessions

Use case ID: 031
Author: Senate of Italy
Date: 12 June 2024

Objective:
Provide users with reliable transcriptions of words spoken during sessions of the Senate bodies, enhancing transparency and accessibility.

Actors:
- Citizens
- Senate users (e.g. senators and parliamentary staff)

Prerequisites:
- Basic knowledge of computer tools
- Access to session videos and audio recordings

Scenario:
1. The user accesses the video of a Senate session.
2. The user requests a transcript of the session.
3. The AI system processes the audio and generates a transcript.
4. The transcript includes identification of speakers and timestamps for each intervention.
5. The transcript is reviewed for accuracy and stored in a digital format.

Alternate flows:
- If the AI system cannot identify a speaker, the transcript is flagged for manual review.
- If the audio quality is poor, the system prompts the user to upload a clearer version or provides suggestions for improving audio capture in future sessions.

Expected results:
- Session audio is accurately transcribed in a widely used digital format.
- Transcripts are linked to specific moments in the video for easy reference.
- Speakers are identified, with associated timestamps to enhance clarity.

Potential challenges:

- Transcription errors or ambiguous interpretations owing to audio quality or overlapping speech
- Difficulty in accurately identifying all speakers, especially in large or noisy sessions
- Ensuring the accuracy of timestamps linked to each speaker's intervention

Data requirements:

- High-quality video and audio recordings of Senate sessions
- Metadata related to session schedules and speaker lists for better speaker identification

Integrations with other systems:

- Parliamentary document management system for storing and retrieving transcripts
- User authentication system to ensure secure access to transcripts

Success metrics:

- Accuracy rate of transcripts compared to manual transcripts
- User satisfaction scores regarding transcript quality and usability
- Reduction in time required to produce transcripts
- Number of successfully identified speakers and accurately timestamped interventions

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Creation of draft summary reports based on transcripts of parliamentary sessions

Use case ID: 032
Author: Senate of Italy
Date: 12 June 2024

Objective:
Generate summary reports, in the standard style of Senate summary reports, derived from the transcript of a chamber or committee session.

Actors:
- Senate users (e.g. documentalists and parliamentary staff)
- Citizens

Prerequisites:
- Basic knowledge of computer tools
- Access to session transcriptions

Scenario:
1. A documentalist selects a transcript of a chamber or committee session.
2. The documentalist invokes a generative AI service to process the transcript.
3. The AI system generates a draft summary report based on the transcript.
4. The documentalist reviews and finalizes the summary report for accuracy and completeness.

Alternate flows:
- If the AI-generated summary contains errors or omissions, the documentalist manually edits the report to ensure accuracy.

Expected results:
- The summary report provides a concise summary proportional to the length of the interventions.
- The summary preserves significant parts of the text, especially the interventions of the Speaker or chair (of the chamber or committee).

- The summary clearly indicates the speakers for each intervention.

Potential challenges:
- High rate of hallucinations or inaccurate content generation by the AI system
- Disproportionate summary that either over-condenses or under-summarizes interventions
- Ensuring the AI system correctly identifies and attributes the speakers

Data requirements:
- Accurate and complete transcripts of the session
- Metadata related to session schedules and speaker lists for better speaker identification

Integrations with other systems:
- Parliamentary document management system for storing and retrieving summary reports
- User authentication system to ensure secure access to AI-generated summaries

Success metrics:
- Low rate of AI-generated hallucinations in summary reports
- User satisfaction scores regarding the accuracy and quality of summaries
- Reduction in time required to produce summary reports
- Proportional and accurate summarization of session content

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Generation of draft stenographic reports based on transcripts of parliamentary sessions

Use case ID: 033
Author: Senate of Italy
Date: 12 June 2024

Objective:
Generate a draft stenographic report from the transcript of a chamber or committee session, adhering to the Senate's format and standards.

Actors:
- Senate users (e.g. documentalists and clerks)
- Citizens accessing public records

Prerequisites:
- Basic knowledge of computer tools by Senate users
- Access to transcription data of the session

Scenario:
1. A Senate user selects the transcript of a specific chamber or committee session.
2. The user invokes a generative AI service designed to process the transcript.
3. The AI system processes the transcript and generates a draft stenographic report that conforms to the Senate's format and standards.
4. The user reviews the AI-generated report for accuracy and format compliance, making adjustments as necessary.

Alternate flows:
- If the AI-generated report contains significant errors or is incomplete, the documentalist can manually edit the report or reprocess the transcript using the AI service.

Expected results:

- The stenographic report accurately reflects the transcript and adheres to the Senate's structural standards.
- Efficiency in generating stenographic reports is enhanced, with reduced manual effort.

Potential challenges:

- High rate of AI hallucinations (i.e. inaccuracies or fabrications in the generated text)
- Ensuring the generated report consistently meets the formal and structural standards required by the Senate
- Handling variations in speech patterns, accents and languages used during sessions

Data requirements:

- Accurate and complete transcriptions of parliamentary sessions
- Historical stenographic reports to train the AI model on the required format and standards

Integrations with other systems:

- Integration with the Senate's transcription system to streamline the selection and processing of session transcripts
- Potential future integration with other parliamentary documentation systems for broader applicability

Success metrics:

- Low rate of hallucinations (inaccurate or fabricated content)
- High adherence to the structural and formatting standards of the Senate's stenographic reports
- User satisfaction scores from Senate documentalists
- Time saved in generating stenographic reports compared to manual methods

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-enhanced parliamentary document translation system

Use case ID: 035
Author: Senate of Italy
Date: 12 June 2024

Objective:
Provide efficient and accurate translation of parliamentary documents for use by office staff, leveraging AI-powered large language models (LLMs) to support multilingual communication and documentation.

Actors:
- Parliamentary office staff
- Translation services team
- IT support team

Prerequisites:
- Availability of trained AI LLM models proficient in multiple languages relevant to parliamentary work
- Integration with the existing document management and workflow systems
- Access to a comprehensive corpus of parliamentary documents for training and reference
- Compliance with data privacy and security regulations

Scenario:
1. A parliamentary staff member submits a document for translation via the translation service portal.
2. The AI LLM system receives the document and identifies the source and target languages.
3. The AI LLM system pre-processes the document to ensure text clarity and format consistency.
4. The AI LLM system translates the document, maintaining context and terminology accuracy.
5. The translated document is reviewed by a human translator for quality assurance.
6. The final version is delivered to the staff member through the document management system.

7. The system logs the translation activity for future reference and analysis.

Alternate flows:
- If the AI LLM system encounters an uncommon term or phrase, it flags it for human review before proceeding.

Expected results:
- Efficiency in document translation processes is improved.
- Translations are more accurate and consistent.
- Support for multilingual parliamentary operations is enhanced.
- Turnaround time for translation requests is reduced.
- Resources are better allocated, allowing human translators to focus on more complex tasks.

Potential challenges:
- Ensuring the AI LLM system maintains high accuracy across diverse languages and dialects
- Handling sensitive information securely within the translation system
- Managing integration with existing IT infrastructure and workflows
- Addressing resistance to adoption among staff accustomed to traditional translation methods

Data requirements:
- Multilingual parliamentary documents and datasets for training the AI LLM system
- Glossaries of parliamentary terms and phrases
- Historical translation records for reference and continuous improvement
- Metadata about document types, languages and translation history

Integrations with other systems:
- Document management system (DMS)
- Workflow automation tools
- Secure data storage solutions
- User authentication and access control systems

Success metrics:
- Translation accuracy rate
- Average time taken to complete a translation
- User satisfaction scores
- Reduction in backlog of translation requests
- Percentage of translations requiring minimal human intervention

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Summarizing of parliamentary documents and conversion into podcasts

Use case ID: 044
Author: Parliament of Finland
Date: 8 July 2024

Objective:
Generate summaries of XML or PDF documents (of between 10 and 1,000 pages) published on the parliamentary website, and create audio files for the podcast.

Actors:
- Backend system
- Application programming interface (API)
- Parliamentary website
- Committee members
- Generative artificial intelligence (AI)-powered assistant
- Deep learning technology

Prerequisites:
- Backend system publishing documents in XML, PDF and CSV formats to the website API
- API capable of converting documents in predefined formats into HTML and publishing them on the parliamentary website
- Generative AI-powered assistant and speech learning system with access to the files
- Generative AI-powered assistant trained on parliamentary material and knowledge and backed up with guidelines, references and citations to source documents, etc.
- Speech learning tool presets configured

Scenario:
1. The backend system publishes documents (e.g. committee reports) to the website API in XML format.

2. The API converts the XML document into HTML format and publishes it on the parliamentary website.
3. The API also moves the XML file to the predetermined location.
4. The generative AI-powered assistant generates a summary from the XML file and saves this in the predetermined location.
5. The speech learning system transforms the XML file, creating a summary using natural-sounding human speech and saving it as an audio file (MP3, OGG).

Alternate flows:

- A committee member can choose, from their device, any public parliamentary document published on the parliamentary website for reading or listening.

Expected results:

- Summaries make it faster and easier to absorb large amounts of material and get an overall picture.
- Parliamentary materials are more discoverable, accessible and reusable.
- Listening to the content frees up other senses for other activities (e.g. it is possible to listen to a podcast while walking or driving).

Potential challenges:

- Gaps in the definitions of AI-tool presets
- The security of the content, including compliance, privacy and infrastructure
- The accuracy and truthfulness of the content produced, including potential hallucinations

Data requirements:

- Public data from parliament

Integrations with other systems:

- Backend system
- Integration platform
- Cloud platform
- Databases
- Generative AI-powered assistant
- Speech learning system
- Multi-factor authentication (MFA)

Success metrics:

- Error rate of no more than 1% in a random sample of summaries
- Error rate of no more than 2% in a random sample of audio files
- Web Content Accessibility Guidelines (WCAG) 2.1 Level AA for technical accessibility (score of 80%)
- Use of parliamentary services measured according to the following three-step scale:
    1. Use of the service is technically successful
    2. Use is effortless and easy
    3. Use is pleasant, interesting and even inspiring
- Average usability target of level 2

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Audio-to-text parliamentary transcription system

Use case ID: 047
Author: Parliament of Israel
Date: 10 Jul 2024

Objective:
Transcribe recorded audio files into text, supporting various parliamentary functions, such as maintaining official records of parliamentary speeches and transcribing public hearings, thereby shortening the time required to produce protocols, and reducing hand-related medical issues (such as repetitive strain injury) among parliamentary stenographers.

Actors:
- Stenographers
- IT department
- Data & information department
- Protocols department

Prerequisites:
- High-end recording system in the plenum
- Artificial intelligence (AI) model trained for speech-to-text transcription
- Integration with stenographers' digital management system (E-Parliament)

Scenario:
1. When a parliamentary meeting starts, the audio recordings are sent in real time to the automatic speech recognition (ASR) engine to produce a text transcript.
2. Stenographers review and correct portions of the preliminary diarized transcript to produce the current segment of the parliamentary meeting for publication.
3. When the parliamentary meeting ends, the system combines all the text transcripts into one protocol and publishes it on the parliamentary website.

Alternate flows:
- The process is done manually.

Expected results:

- Workload for stenographers is reduced.
- Protocols are produced and distributed more quickly.
- The process of transcribing speech is more efficient.
- The quality of protocols is increased.

Potential challenges:

- Accuracy of ASR-produced protocols
- Issues with the output of the ASR system caused by issued with recorded sound quality
- AI model training based on transcription history, which might be incomplete or contain potential inaccuracies.

Data requirements:

- Historically recorded speech recordings for enhancing the performance of AI models
- Periodic verification of the AI model's performance
- Historic plenum speech protocols

Integrations with other systems:

- Stenographers' digital management system (E-Parliament)
- Legislation system (Sanhedrin)
- Public parliamentary website
- AI-powered ASR system
- Business intelligence reporting tools
- Plenum audio/video recording system

Success metrics:

- Automatic transcription process time
- Word error rate (WER)
- Multiple concurrent ASR processes with no performance degradation

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chamber session summary assistant

Use case ID: 059
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Obtain, generate or propose the structure of a Chamber session for drafting minutes and reports.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Officials

Prerequisites:
- Database
- Literal transcripts of sessions
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. The official in charge of drafting session reports receives a proposal from the LLM, which can be validated, modified or discarded in order to produce the deliverable version of the minutes or session report.

Expected results:
- The time needed to produce deliverables such as reports or minutes is reduced.
- Sessions are automatically processed and stored in different formats.
- Repetitive, low-impact tasks are delegated to the LLM, with subsequent human validation.

Potential challenges:

- Need for human validation at all times
- Delegation of all tasks (generative and final) to the LLM
- Operational bias

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- LLM's own knowledge

Integrations with other systems:

- Management and administration systems for senior corporate management
- Management and operational administration systems responsible for drafting and producing deliverables

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Committee session summary assistant

Use case ID: 060
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Obtain, generate or propose the structure of a committee session for drafting minutes and reports.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Officials

Prerequisites:
- Database
- Literal transcripts of sessions
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. The official in charge of drafting session reports receives a proposal from the LLM, which can be validated, modified or discarded in order to produce the deliverable version of the minutes or session report.

Expected results:
- The time needed to produce deliverables such as reports or minutes is reduced.
- Sessions are automatically processed and stored in different formats.
- Repetitive, low-impact tasks are delegated to the LLM, with subsequent human validation.

Potential challenges:

- Need for human validation at all times
- Delegation of all tasks (generative and final) to the LLM
- Operational bias

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- LLM's own knowledge

Integrations with other systems:

- Management and administration systems for senior corporate management
- Management and operational administration systems responsible for drafting and producing deliverables

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automated Hansard report system: Converting parliamentary audio to text using AI

Use case ID: 062
Author: Council of Representatives of Bahrain
Date: 6 October 2024

Objective:
Automatically transcribe parliamentary sessions from audio to text, generating accurate Hansard reports in real-time. This AI-driven solution will streamline the process of producing official records, enabling parliamentary debates and discussions to be documented with greater efficiency and accuracy.

Actors:
- Parliamentary staff responsible for Hansard report generation
- MPs
- Audiovisual technical team
- AI development and support team

Prerequisites:
- High-quality audio recordings of parliamentary sessions
- Pre-trained speech-to-text models, fine-tuned for parliamentary and legislative language
- Integration with existing Hansard report systems and databases
- Access to parliamentary session schedules for real-time transcription

Scenario:
1. Audio recordings or live feeds from parliamentary sessions are captured and sent to the AI system for transcription.
2. The AI system processes the audio in real time, using speech-to-text models to convert spoken words into accurate text.

3. The system identifies and labels speakers, attributing statements to the appropriate MP or staff member, and ensuring accuracy in the official transcript.
4. The AI system formats the transcribed text in line with Hansard report standards, adding timestamps, speaker names and session metadata.
5. Parliamentary staff review the transcript for accuracy and make any necessary edits or adjustments.
6. Once reviewed, the Hansard report is published in the official parliamentary records, making it available to MPs, staff and the public.
7. The system stores the transcripts in a searchable database, allowing users to search for specific debates, speeches or topics within the Hansard archives.

Alternate flows:

- If the audio quality is poor or multiple people are speaking at once, the system flags sections of the transcript for manual review.
- If there are any technical issues with the audio feed, the system switches to a backup recording or prompts staff for intervention.
- If the AI system cannot recognize an MP's speech owing to an uncommon dialect or the use of jargon, it highlights the section for manual transcription.

Expected results:

- Enhanced speed and accuracy in generating Hansard reports by automating audio-to-text transcription
- Reduced manual effort for parliamentary staff in producing official records
- Improved accessibility to parliamentary debates through real-time transcription
- Searchable archives of parliamentary sessions, making it easier for MPs, staff and the public to access historical records

Potential challenges:

- Ensuring the AI system accurately transcribes complex parliamentary language, dialects and technical terms
- Handling background noise, overlapping conversations and unclear speech during sessions
- Maintaining security and confidentiality when processing sensitive or classified parliamentary discussions
- Integrating the transcription system seamlessly with existing Hansard production workflows

Data requirements:

High-quality audio feeds from parliamentary sessions

- Pre-trained speech-to-text models, fine-tuned for legislative language
- Annotations or manual transcripts for training and improving the AI system
- Parliamentary speaker profiles for accurate attribution of speeches

Integrations with other systems:

- Hansard report management and publication systems
- Parliamentary audiovisual systems
- Database systems for storing and searching transcribed reports

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Hansard voice-to-text conversion and review

Use case ID: 065
Author: Bahrain Shura Council
Date: 17 October 2024

Objective:
This process aims to convert spoken dialogue from weekly parliamentary meetings into accurate written texts, categorized by topic and indexed by speaker for each item of the session meeting, which the Hansard team then reviews to make the necessary corrections with minimal effort and as quickly as possible. This ensures reliable documentation of parliamentary debates for future reference and categorized by an AI model to analyze topics and historical context.

Actors:
- Parliamentary staff: responsible for recording meetings and supervising the transcription process.
- Hansard editors: reviewing and correcting transcriptions for accuracy and clarity.
- AI model: converting audio to text, identifying the speaker, replacing colloquial words with the correct equivalent, deriving indexes by topic, by classification and by speaker, analyzing the text, linking to topics and historical reference.

Prerequisites:
- High-quality audio recording of parliamentary meetings.
- AI transcription solution capable of converting audio to text and identifying the owner of the voice.
- Access to trained Hansard editors to review transcripts.
- Integration of AI tools for text analysis and classification and dialogue.

Scenario:
1. Audio recordings of weekly Parliament meetings are captured and uploaded securely.

2. The recording is processed through intelligent transcription software, converting the spoken content into written text, identifying the MP speaking and replacing the dialect words with the correct ones.
3. The transcribed text is distributed among Hansard editors for final review.
4. The editors carefully check the text for accuracy, correct any errors or inconsistencies, and ensure clarity and fidelity to the original speech.
5. Once completed, the final template of the minutes, including its indexes and appendices, is automatically extracted and ready for approval as a first draft by the honourable members and the procedure is passed to them digitally. The text is then stored in the Hansard database for access through the website and for future research, statistical and analytical uses.
6. An artificial intelligence model is then used to analyse the completed transcripts, classify the topics discussed and identify any references to previous discussions related to these topics.

Alternative flows:

- Error Handling: If the initial transcription contains significant inaccuracies, editors may request re-transcription of specific sections to ensure reliability.

Expected results:

- Fast, accurate and reliable documentation of texts related to parliamentary meetings, which increases the efficiency of the performance of the work of the General Secretariat provided to the Mps.
- Improved decision-making, research, analysis and retrieval of information related to parliamentary discussions.
- Improved classification and contextual understanding of the topics discussed and the extraction of numerous reports and statistics that help reduce the work related to preparing annual reports on the achievements of Parliament

Potential challenges:

- Transcription accuracy: Variations in the clarity and quality of audio recordings may impact the quality of transcriptions.
- Bahraini dialect terms are numerous and varied.
- Time constraints: Tight deadlines may pressure editors to finish quickly, impacting accuracy.
- AI capabilities: The effectiveness of topic classification depends on the training of the AI model and its ability to understand context.

Data requirements:

- High-quality audio recordings of parliamentary meetings.
- Complete, edited text documents of the transcribed sessions.
- Historical data on previously discussed topics for reference in the AI model
- Bahrain dialect vocabulary dictionary.

Integrations with other systems:

- Integration with audio transcription software for seamless processing of meeting recordings.
- Connection to a document management system for storing and retrieving finalized transcripts.

- Integration with AI classification tools to enhance topic analysis and historical referencing capabilities.
- Integration to the Parliament website
- Integration with Virtual Assistant

Success metrics:

- Accuracy of the transcriptions produced compared to spoken content.
- Reduction in time taken to finalize and distribute transcriptions.
- Effectiveness of the AI model in accurately classifying topics and identifying previous discussions (measured by user feedback and queries on referenced topics).
- Frequency of retrieval and usage of classified information by parliament members and the Hansard department.
- The satisfaction of the MPs with the results of the dialogue related to the decisions and results of the sessions

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chatbots and user support

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chatbot for the parliamentary documentation website

Use case ID: 008
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Provide a chatbot so that users can submit queries about parliamentary documentation in natural language. The chatbot answers in natural language and provides links to the references used to produce the answer.

Actors:
- Users of the parliamentary documentation website
- Chatbot

Prerequisites:
- Existing parliamentary documentation database
- Existing content management systems for parliamentary documentation
- Existing parliamentary documentation website

Scenario:
1. The user initiates a chat session with the AI chatbot.
2. The AI chatbot greets the user and asks how it can assist them.
3. The user describes the issue or question.
4. The AI chatbot analyses the user's input and searches the knowledge base for relevant information.
5. The AI chatbot provides a helpful response to the user's query.
6. If the AI chatbot is unable to fully resolve the issue, it apologises and asks the user to reformulate the question or ask a different one.

Expected results:
- User satisfaction is improved through faster response times and 24/7 availability.
- The human support workload is reduced.
- User enquiries are handled more efficiently.

Potential challenges:

- Ensuring the AI chatbot provides accurate and relevant responses
- Handling questions that may not be covered in the knowledge base
- Maintaining a natural and engaging conversation flow

Data requirements:

- Parliamentary documentation knowledge base

Integrations with other systems:

- Parliamentary documentation database
- Content management systems for parliamentary documentation
- Parliamentary documentation website

Success metrics:

- Average response time
- User satisfaction scores
- Percentage of questions answered by the AI chatbot without human intervention

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chatbot for a better understanding of the process of a bill

Use case ID: 010
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Provide a chatbot so that users can submit queries regarding parliamentary proceedings concerning a specific bill. The chatbot answers in natural language and provides links to the references used to produce the answer.

Actors:
- Users of the chatbot (from the business units)
- Chatbot

Prerequisites:
- Existing database and content management system for bills
- Existing database and content management system for amendments
- Existing database and content management system for hearings
- Existing database and content management system for votes
- Existing database and content management system for verbatim reports
- Existing database and content management system for parliamentary documentation

Scenario:
1. The user initiates a chat session with the AI chatbot.
2. The AI chatbot greets the user and asks how it can assist them.
3. The user describes the issue or question.
4. The AI chatbot analyses the user's input and searches the knowledge base for relevant information.
5. The AI chatbot provides a helpful response to the user's query.
6. If the AI chatbot is unable to fully resolve the issue, it apologises and asks the user to reformulate the question or ask a different one.

Expected results:

- User satisfaction is improved through faster response times and 24/7 availability.
- The human support workload is reduced.
- User enquiries are handled more efficiently.

Potential challenges:

- Ensuring the AI chatbot provides accurate and relevant responses
- Handling questions that may not be covered in the knowledge base
- Maintaining a natural and engaging conversation flow

Data requirements:

- Database and content management system for bills
- Database and content management system for amendments
- Database and content management system for hearings
- Database and content management system for votes
- Database and content management system for verbatim reports
- Database and content management system for parliamentary documentation

Integrations with other systems:

- System used to manage bills
- System used to manage amendments
- System used to manage hearings
- System used to manage votes
- System used to manage verbatim reports
- System used to manage parliamentary documentation

Success metrics:

- Average response time
- User satisfaction scores

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chatbot for simplifying the comprehension of Italian laws

Use case ID: 011
Author: IT Department, Chamber of Deputies of Italy
Date: 22 May 2024

Objective:
Provide a chatbot so that users can submit queries about sets of national laws in natural language.

Actors:
- Users of the chatbot

Prerequisites:
- Existing database and content management system for national laws

Scenario:
1. The user initiates a chat session with the AI chatbot.
2. The AI chatbot greets the user and asks how it can assist them.
3. The user describes the issue or question regarding national laws.
4. The AI chatbot analyses the user's input and searches the knowledge base for relevant information.
5. The AI chatbot provides a helpful response to the user's query.
6. If the AI chatbot is unable to fully resolve the issue, it apologises and asks the user to reformulate the question or ask a different one.

Expected results:
- User satisfaction is improved through faster response times and 24/7 availability.
- The human support workload is reduced.
- User enquiries are handled more efficiently.

Potential challenges:
- Ensuring the AI chatbot provides accurate and relevant responses
- Handling questions that may not be covered in the knowledge base
- Maintaining a natural and engaging conversation flow

Data requirements:

- Database and content management system for national laws

Integrations with other systems:

- System used to manage national laws

Success metrics:

- Average response time
- User satisfaction scores

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Chatbot on security in the European Parliament

Use case ID: 014
Author: European Parliament
Date: 5 June 2024

Objective:
Develop the S.A.S.H.A. chatbot, which aims at making it faster and more efficient to access information, particularly about security issues in the European Parliament.

Actors:
- Innovation, Intranets and Digital Solutions Unit (INNOVIT)
- Directorate for Publishing, Innovation and Data Management
- Directorate-General for Innovation and Technological Support (DG ITEC)
- Directorate-General for Security (DG SAFE)

Prerequisites:
- No hardware or software requirements if the end-user interface is used
- The chatbot is developed hosted externally by Sinch (Chatlayer) and hosted externally on the Sinch SAAS platform.

Scenario:
1. The user visits a relevant page on the European Parliament (EP) intranet.
2. The chatbot pops up and the user asks a question about the topics in scope, or chooses to navigate to the topic their question is about.
3. The chatbot answers the question, pointing to the intranet page where more information can be found.

Alternate flows:
- If the question is out of the scope of the chatbot, it will produce an answer such as “Sorry, I was not able to understand your question. Could you please rephrase your question?”.
- If there are too many unknown questions, the chatbot will redirect the user to a phone number.

Expected results:
- The chatbot informs the user in a timely and accurate manner.

Potential challenges:

- Handling inputs in several languages and maintaining high-quality output in English
- Handling ambiguous or poorly structured text inputs

Data requirements:

- Input: a question from the user
- Database: information from safety and security services

Integrations with other systems:

- The chatbot is integrated into the EP intranet.

Success metrics:

- User satisfaction and feedback from end users regarding the accuracy and relevance of answers, using an evaluation mechanism

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-powered customer support chatbot

Use case ID: 015
Author: European Parliament
Date: 14 May 2024

Objective:
Provide 24/7 customer support and improve response times using an AI-powered chatbot.

Actors:
- Customers seeking assistance
- Customer support team
- AI chatbot system

Prerequisites:
- Existing customer support knowledge base
- Integration with the customer support ticketing system
- Trained AI model for natural language understanding and generation

Scenario:
1. The customer initiates a chat session with the AI chatbot.
2. The AI chatbot greets the customer and asks how it can assist them.
3. The customer describes their issue or question.
4. The AI chatbot analyses the customer's input and searches the knowledge base for relevant information.
5. The AI chatbot provides a helpful response to the customer's query.
6. If the AI chatbot is unable to fully resolve the issue, it escalates the conversation to a human customer support representative.
7. The conversation is logged in the customer support ticketing system for future reference and analysis.

Alternate flows:
- If the customer's issue is complex and requires human intervention from the start, the AI chatbot immediately transfers the conversation to a human representative.

Expected results:

- Customer satisfaction is improved through faster response times and 24/7 availability.
- Workload for human customer support representatives is reduced.
- Common customer enquiries are handled more efficiently.

Potential challenges:

- Ensuring the AI chatbot provides accurate and relevant responses
- Handling complex or unique customer issues that may not be covered in the knowledge base
- Maintaining a natural and engaging conversation flow

Data requirements:

- Customer support knowledge base (FAQs, product information, troubleshooting guides)
- Historical customer support conversations for training the AI model
- Real-time customer interactions with the chatbot

Integrations with other systems:

- Customer support ticketing system
- Live chat platform
- Analytics and reporting tools

Success metrics:

- Average response time
- Customer satisfaction scores
- Percentage of issues resolved by the AI chatbot without human intervention
- Reduction in support ticket volume for human representatives

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-powered automated subtitling system

Use case ID: 017
Author: Riigikogu (The Estonian Parliament)
Date: 5 June 2024

Objective:
Produce AI-powered automated subtitles to make live broadcasts from the session hall accessible to hearing-impaired individuals by providing a textual representation of the spoken dialogue in an efficient way.

Actors:
- Members of parliament (speeches of members of parliament in the session hall)
- Video recording and broadcasting system
- Available real-time speech-to-text tool

Prerequisites:
- Well-trained real-time speech-to-text system of sufficient quality
- Willingness to give part of the human work to the AI system

Scenario:
1. The video recording and broadcasting system produces a video and audio stream for online viewers.
2. One audio stream is sent through a real-time speech-to-text tool.
3. The real-time speech-to-text tool creates subtitles from the audio stream. It can detect changes of speaker, tries to reconstruct unrecognised words (using a phoneme-to-grapheme tool), uses the compound-word recognizer to construct compound words, and inserts punctuation.
4. The real-time speech-to-text tool sends out generated subtitles for Youtube Live captions.
5. In the selected environment, the subtitle stream must be displayed together with the main stream.

Alternate flows:
- An alternative is to manually create online subtitles, which is a very labour-intensive task, especially for longer online broadcasts.

Expected results:

- The need for human labour is reduced.

Potential challenges:

- This system makes more mistakes when composing the text because there is less time to process the audio.

Integrations with other systems:

- There is no direct need for integration, although any kind of integration makes the entire system more automated and further reduces the need for human labour.

Success metrics:

- The speech-to-text error rate is less than 40%.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Regulations and parliamentary allowances assistant

Use case ID: 049
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Respond to questions and requests for information related to the regulations, manuals or documents governing parliamentary allowances and their use.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the Covid-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians: to know the norms and best practices for public funds allocated to support their parliamentary work
- Officials: to access an efficient and intuitive tool for supporting the regulation of public fund usage

Prerequisites:
- Database
- Vectorized regulations documentation
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. Both parliamentarians and officials interact with AI in their daily virtual work environment, such as in ERPs and automated information generation systems (e.g. emails or mailboxes).
2. Officials integrate the assistant into their approval systems.

Expected results:

- The time spent reviewing and regulating general expenses and the use of public funds is reduced.
- Approval/rejection errors are reduced.
- A first line of solutions is created for doubts and frequently asked questions, freeing up time that would otherwise be spent on repetitive work.
- The GenAI concept is integrated into the daily work of officials as a tool rather than a replacement.

Potential challenges:

- Resistance to change among officials
- Bias and misuse
- Data integrity
- Storage and analysis of feedback
- Validation and sustainability of the technology
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation (e.g. Labour Code)
- LLM's own knowledge

Integrations with other systems:

- Parliamentary allowances management system (ASIGPAR)
- Parliamentary service system (PORTAL)

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Impact on post-implementation operational performance variables

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Current legal norms assistant

Use case ID: 050
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Respond to questions and requests for information related to any current legal norms by accessing the national legal normative database.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians

Prerequisites:
- XML database
- Vectorized regulations documentation
- Vectorized legal documentation at different legal levels
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. A platform exists that allows user interaction, as defined, for the query stated in the objective. This interface delivers the requested information unidirectionally, not allowing user-system feedback.

Expected results:
- Real and clear information is delivered according to the query.

Potential challenges:
- Integrity of the response and legal precision
- Bias limitations

- Mis-interpreted response because the tool does not understand the context of relevant laws
- Corporate responsibility exemption, ensuring the information provided is fully informative
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation, which may be related to legislative power but not part of the set to be consulted

Integrations with other systems:

- Parliamentary service system (PORTAL)
- Administration systems for senior corporate management
- Citizen interaction systems

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Legislative coherence

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Invoice information extraction assistant

Use case ID: 055
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Extract relevant information from expense accreditation documents such as receipts or invoices.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Officials: to access an efficient and intuitive tool to support the regulation of public fund usage

Prerequisites:
- Database
- Vectorized regulations documentation
- Formatted files of expense accreditation documents
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. Officials involved in approving expenses related to parliamentary work receive a proposed endorsement result accompanied by the extracted information. They validate the proposal by indicating data correctness. The goal is to quickly extract the document, store it rapidly and make it available for consumption by other assistants.

Expected results:
- The time taken to extract data from documents is reduced.

- The extraction error rate is reduced owing to a second review.
- Accuracy rates are quantified for image data extraction technologies.

Potential challenges:
- Need for human validation at all times
- Possible error margins (independent of LLMs) in image data extraction technologies

Data requirements:
- Updated database for assistant consumption
- LLM's own knowledge

Integrations with other systems:
- Parliamentary allowances management system (ASIGPAR)

Success Metrics:
- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Impact on post-implementation operational performance variables

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Online parliamentary allowances data assistant

Use case ID: 056
Author: Chamber of Deputies of Chile
Date: 20 August 2024

Objective:
Know specific information about consumption, available funds or total allocations in parliamentary allowances management systems, thus affecting enquiry speed and eliminating the first line of enquiry to parliamentary assistants.

This use case describes part of a suite of AI-based products. The CAMINAR platform supports legislative work with the help of AI. It emerged as an innovative response to the challenges faced by the National Congress of Chile during the COVID-19 pandemic and owing to the country's political situation. The project seeks to leverage the digital strengths of the Chamber of Deputies by utilizing its regulatory repository and parliamentary databases.

Actors:
- Parliamentarians: to understand the amount of parliamentary allowances that are available
- Officials: to access an efficient and intuitive tool to support the regulation of public fund usage

Prerequisites:
- Database
- Vectorized regulations documentation
- Documented or officiated parameters indicating maximum or base amounts
- Appropriate prompt
- System to integrate the tool into its production phase

Scenario:
1. Both parliamentarians and officials interact with AI in their daily virtual work environment, such as in ERPs and automated information generation systems (e.g. emails or mailboxes). The assistant provides specific information in response to a question posed in natural language by the user.

Expected results:

- A first line of solutions is created for doubts and frequently asked questions, freeing up time that would otherwise be spent on repetitive work.
- The GenAI concept is integrated into the daily work of officials as a tool rather than a replacement.

Potential challenges:

- Resistance to change among officials
- Bias and misuse
- Data integrity
- Storage and analysis of feedback
- Validation and sustainability of the technology
- Need for human validation at all times

Data requirements:

- Vectorized regulations
- Updated database for assistant consumption
- Framework documentation (e.g. Labour Code)
- LLM's own knowledge

Integrations with other systems:

- Parliamentary allowances management system (ASIGPAR)
- Parliamentary service system (PORTAL)

Success metrics:

- Accuracy of the response, when correctness can be determined
- Speed of the response, related to the requirements of repetitive tasks
- Impact on post-implementation operational performance variables

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

AI-powered parliamentary bill and document chatbot for enhanced legislative analysis

Use case ID: 061
Author: Council of Representatives of Bahrain
Date: 6 October 2024

Objective:
Develop an AI-powered chatbot to provide real-time access to all parliamentary bills and documents, improving the process of bill formation and analysis by providing quick answers, summaries and relevant documents on request for MPs, staff and researchers.

Actors:
- MPs
- Parliamentary staff members
- Legislative drafters
- Researchers
- AI development and support team

Prerequisites:
- Comprehensive database of all parliamentary bills and documents
- Pre-trained natural language processing (NLP) models specialized in legal and parliamentary text
- Integration with the parliament's document management system
- Defined intents and queries that the chatbot will handle (e.g. bill summaries, amendment details, cross-referencing documents)

Scenario:
1. An MP or staff member initiates a conversation with the chatbot via the parliament's internal system or a web/mobile interface.
2. The user asks the chatbot questions such as "What are the key points of bill X?" or "Show me all amendments made to bill Y".

3. The chatbot processes the query using NLP to understand the intent and retrieves relevant information from the parliamentary bills and documents database.
4. The chatbot responds with concise, summarized answers, relevant sections from documents, or direct links to full bills and amendments.
5. The user can follow up with more specific queries such as “List the provisions related to environmental regulations in bill Z” or “Which MPs proposed amendments to bill A?”.
6. The chatbot allows users to download reports, summaries or full documents for further analysis.
7. If the query involves complex analysis or document cross-referencing, the chatbot provides the user with a detailed summary or suggests other related documents to consult.
8. The system logs all interactions for analysis and continuous improvement, learning from user queries to better address future questions.

Alternate flows:

- If the chatbot does not understand a query, it prompts the user to rephrase the question or offers suggested queries based on the context.
- If a document is missing or outdated, the chatbot flags the issue and provides contact information for the parliamentary document team.

Expected results:

- Faster, more efficient access to bills and parliamentary documents for MPs and staff
- Improved accuracy in retrieving relevant information for bill formation and analysis
- Less time spent manually searching for documents, allowing MPs and staff to focus on legislative work
- Enhanced transparency and collaboration through easy access to all parliamentary documents

Potential challenges:

- Ensuring the chatbot understands complex or ambiguous legal language and parliamentary terminology
- Keeping the chatbot’s database up to date with newly introduced bills, amendments and legislative documents
- Addressing variations in how different MPs and staff phrase their queries
- Integrating with existing systems while maintaining data security and privacy

Data requirements:

- Full database of parliamentary bills, amendments and related documents
- Metadata tagging for each document (e.g. date, proposer, subject matter)
- Pre-trained NLP models for bill formation and analysis, including legal terminology
- Real-time updates to bills and documents as new legislation is introduced

Integrations with other systems:

- Parliamentary document management system
- User authentication and access control systems

- Search and retrieval systems for bills and documents

Success metrics:

- Chatbot response accuracy rate for queries related to bills and documents
- Reduction in the time taken by users to retrieve key information
- Increase in the number of successful bill queries and document downloads
- User satisfaction scores from MPs, staff and researchers
- Number of follow-up queries and engagement with the chatbot over time

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Automated assistant for parliamentary query resolutions

Use case ID: 064
Author: Bahrain Shura Council
Date: 7 October 2024

Objective:
To enhance the efficiency and improve the accuracy of query resolutions related to legislative matters, enabling parliament members and staff to access critical information quickly and make informed decisions.

Actors:
- Members of Shura Council
- Legislative Staff
- IT Department
- Potential Public Citizens

Prerequisites:
- Establish a secure internal network to host the AI system.
- Availability of structured data and documents in digital format.
- Access to up-to-date databases for all included information categories
- FAISS indexing of all data sources
- Secure server infrastructure to host the chatbot
- User authentication system
- Provision of comprehensive training for parliamentary staff on the effective use of AI tools.
- Implementation of security protocols to ensure the protection of sensitive legislative information.

Scenario:
1. The user (a Shura council member or staff member) initiates a session by logging into the secure internal network.
2. The user submits a query related to specific legislative texts or requests a summary of recent research documents, currently limited to the constitution and the legislative reference documents.

3. The AI system processes the user's input using natural language processing algorithms, retrieving and presenting relevant answers and accurate summaries.
4. The user interacts further with the results, possibly asking follow-up questions requesting detailed analyses of selected documents or comparing between more than one subject.
5. If the system does not find the requested information, it suggests alternative queries or guides rephrasing, while saving the queries that haven't been found in the database for future training.
6. All user interactions and retrieved data are logged for transparency and performance evaluation.

Alternative flows:

- In cases where a complex query first arises, the AI system will directly escalate to log the text for further future analysis.
- If there is a failure in the AI system (e.g., unavailability or technical error), the user will receive an alert with instructions on seeking assistance from the UI.

Expected results:

- Significant time reduction in the retrieval and management of legislative documents.
- A qualitative leap in preparing working papers, research, comparative reports, and analysis
- Improved accuracy in responses to legislative inquiries.
- Increased accessibility for both parliament members and the 'potential' public to essential documents and information.
- The percentage of draft proposals for a new law or amendment to a previous law has increased.

Potential challenges:

- Risks related to the security of sensitive legislative data and potential unauthorized access.
- Resistance from staff or members accustomed to traditional methods of managing documentation.
- Ongoing maintenance and updates required for the AI system to ensure its efficacy and reliability.
- Availability of highly skilled data scientists and system engineers with the required tech stack.
- Ensuring accuracy and up-to-date information in the chatbot's responses
- Managing user expectations and handling complex queries
- Keeping the system updated with new information and legislative changes

Data requirements:

- Access to a comprehensive collection of legislative documents, legal texts, and research papers in a digital format, and in Json file formats. This makes it easy for the APIs to make the calls and collect the data and return it in the appropriate format to the user.
- User interaction data to continuously enhance the system's learning and response capabilities.

- Metadata to provide context for documents, including versions and historical changes.

Integrations with other systems:

- Integration with existing document management systems within the parliamentary framework (currently the constitution and the legislative reference documents and His Majesty the King's Speeches – Done
- Linking with other systems using advanced API techniques to exchange data – in progress
- Integration with Shura Council's existing systems
- Possible integration with internal communication platforms
- API connections to update data sources automatically when possible

Success metrics:

- Reduction in average time for document retrieval and query resolution.
- High levels of user satisfaction reflected in feedback from parliament members and staff.
- Quantifiable increases in the number of successfully answered inquiries by the AI system.
- Compliance with data security and privacy regulations, ensuring no breaches of sensitive information occur.
- Identifying the wrong answers given by users and correcting them in the system while pushing a new build in a very short time.

The Use cases for AI in parliaments collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Public engagement and open parliament

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Analysis of citizens' opinions on bills

Use case ID: 023
Author: Chamber of Deputies of Brazil
Date: 24 June 2024

Objective:
Read citizens' comments on a bill, as expressed in e-polls and other participatory channels, in order to identify and categorize the main arguments for or against the bill.

Actors:
- Citizens publicly expressing their opinions
- MPs
- Communication (or engagement) unit staff
- AI system designed for semantic clustering, optionally integrated with sentence segmentation, stance detection and sentiment analysis

Prerequisites:
- Database correlating citizens' comments with associated bills
- Automated text indexing or vectorization process, encompassing proper sentence segmentation, tokenization and semantic representation
- Database to store user feedback needed to improve the AI system
- Integration with digital services commonly used by MPs and communication staff

Scenario:
1. Citizens express their opinion on a specific bill.
2. Periodically, the AI system breaks down citizens' comments into smaller sentences, subsequently creating clusters that share similar semantics and stance, whether positive or negative.
3. An MP or communication staff member selects a bill (or its corresponding e-poll) to view the clusters generated by the AI system.
4. The AI system offers graphical and list-based visualizations of the sentence clusters. Examples of graphical resources include word clouds and 3D spatial distributions of the sentences.

5. An MP or communication staff member provides feedback on the AI-generated clusters.

Alternate flows:

- When necessary, the user can adjust the number of clusters the AI system generates.

Expected results:

- The process of analysing citizens' comments on bills is more efficient.
- The time needed to analyse citizens' comments on bills is reduced.
- AI system results are continuously enhanced through the accumulation of feedback over time.

Potential challenges:

- Ensuring continuous improvement of the AI system over time across various scenarios, including controversial bills and e-polls with few comments
- Addressing performance and memory issues during sentence vectorization (text embeddings) and cluster reduction
- Encouraging users to provide feedback

Data requirements:

- New comments on a given bill require the recreation of the corresponding clusters
- Periodic verification of AI system performance

Integrations with other systems:

- Digital services commonly used by MPs and communication staff
- Comment moderation tool
- Analytics and reporting tools

Success metrics:

- Amount of feedback provided by users of the AI system
- Visual inspection, a qualitative technique, allows for the visualization of clustering results using 2D or 3D graphics

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Natural-language querying of parliament's website

Use case ID: 024
Author: Senate of Italy
Date: 12 June 2024

Objective:
Enable users to query the Senate website's search engines using natural language processed by large language model (LLM)-based artificial intelligence (AI), enhancing the accessibility, accuracy and user experience of the search functionality.

Actors:
- Senate website users (citizens, researchers and journalists)
- Senate IT and web development team

Prerequisites:
- Existing search engine integrated with the Senate website
- Trained LLM-based AI model for understanding and processing natural-language queries
- Database of Senate documents and information to be searched
- Internet accessibility for users

Scenario:
1. The user accesses the Senate website.
2. The user enters a query in natural language (e.g. "What are the latest laws passed on education?") in the search bar.
3. The LLM-based AI model processes the natural-language query to understand the intent and key terms.
4. The LLM-based AI model translates the natural-language query into a format that the search engine can understand.
5. The search engine retrieves relevant documents and information based on the translated query.
6. The results are displayed to the user in a user-friendly format.
7. The user can refine their search or ask follow-up questions in natural language to further narrow down the results.

Alternate flows:

- If the LLM-based AI model cannot understand the query, it prompts the user to rephrase or provides suggestions.
- If the search yields too many or too few results, the system offers advanced search options or filters to refine the search.

Expected results:

- User satisfaction is improved owing to more accurate and relevant search results.
- Usage of the Senate website's search functionality is increased.
- It takes less time and effort for users to find specific information.
- Accessibility for users unfamiliar with technical search terms or Senate document classifications is improved.

Potential challenges:

- None

Data requirements:

- Historical search queries and user interactions for training and improving the LLM model
- Database of Senate documents, laws and other relevant information

Integrations with other systems:

- Existing search engine infrastructure of the Senate website
- LLM-based AI processing systems and models
- User interface components for displaying search results

Success metrics:

- Query response time
- User satisfaction ratings and feedback
- Accuracy and relevance of search results
- Increase in the number of natural-language queries
- Reduction in user queries requiring manual intervention or support

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Website content navigation chatbot

Use case ID: 025
Author: Senate of Italy
Date: 12 June 2024

Objective:
Assist users in navigating the Senate website by providing an artificial intelligence (AI)-powered chatbot that offers content recommendations and guidance based on user queries in natural language.

Actors:
- Senate website users (citizens, researchers and journalists)
- Senate IT and web development team

Prerequisites:
- Existing Senate website with accessible content
- Trained large language model (LLM)-based AI model for understanding and processing natural-language queries
- Database of Senate documents and website content
- Internet accessibility for users

Scenario:
1. The user accesses the Senate website.
2. User initiates a chat session with the AI-powered chatbot, asking a question or seeking guidance (e.g. “How can I find recent bills on health care?”).
3. The LLM-based AI model processes the natural-language query to understand the intent and key terms.
4. The AI chatbot provides a relevant response, directing the user to specific sections, documents or links on the website.
5. If the user’s request is complex, the chatbot may ask follow-up questions to narrow down the results.
6. The chatbot guides the user step by step to the desired content or provides direct links.
7. The user can continue to ask additional questions or seek further assistance within the same chat session.
8. The system logs the interaction for continuous improvement of the chatbot.

Alternate flows:
- If the LLM-based AI model cannot understand the query, it prompts the user to rephrase or provides suggestions.
- If the user requests information not available on the website, the chatbot can suggest alternative sources or direct them to contact support.

Expected results:
- User satisfaction is improved owing to quick and accurate content navigation assistance.
- Engagement and interaction with the Senate website are increased.
- It takes less time and effort for users to find specific information.
- Accessibility for users unfamiliar with the website layout or content structure is improved.

Potential challenges:
- Ensuring the LLM-based AI model can accurately understand diverse phrasing and terminologies
- Handling ambiguous queries or those with multiple possible interpretations

Data requirements:
- Historical user interactions and queries for training and improving the LLM-based AI model
- Database of Senate documents, laws and other relevant information.

Integrations with other systems:
- Existing Senate website infrastructure
- LLM-based AI processing systems and models
- User interface components for the chatbot

Success metrics:
- Query response time
- User satisfaction ratings and feedback
- Accuracy and relevance of chatbot responses
- Increase in the number of users engaging with the chatbot
- Reduction in user queries requiring manual intervention or support

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Natural-language querying of legislative processes and contents

Use case ID: 029
Author: Senate of Italy
Date: 12 June 2024

Objective:
Enable users to query the progress and content of laws, bills and other parliamentary acts using natural language, improving accessibility and user experience by allowing intuitive, human-like interactions with the legislative database.

Actors:
- Senate website users (citizens, researchers and journalists)
- Senate IT and web development team

Prerequisites:
- Existing database of legislative processes and documents
- Trained large language model (LLM)-based artificial intelligence (AI) model for understanding and processing natural-language queries
- Internet accessibility for users

Scenario:
1. The user accesses the Senate website.
2. The user enters a query in natural language (e.g. “What is the current status of the education reform bill?”) in the search bar.
3. The LLM-based AI model processes the natural-language query to understand the intent and key terms.
4. The AI system retrieves relevant information from the legislative database, including the current status, key milestones and content of the specified bill or act.
5. The results are displayed to the user in a user-friendly format, with options to view detailed progress or full texts.
6. The user can refine their search or ask follow-up questions in natural language to obtain more specific information.

7. The system logs the query and results for continuous improvement of the LLM model.

Alternate flows:
- If the LLM-based AI model cannot understand the query, it prompts the user to rephrase or provides suggestions.
- If the search yields too many or too few results, the system offers advanced search options or filters to refine the search.

Expected results:
- User satisfaction is improved owing to quick and accurate responses to queries.
- It takes less time and effort for users to find specific information on legislative processes and documents.
- Accessibility for users unfamiliar with legal terminology or the legislative process is improved.

Potential challenges:
- Ensuring the LLM-based AI model can accurately understand diverse phrasing and terminologies related to legislative processes
- Handling ambiguous queries or those with multiple possible interpretations
- Continuously updating the LLM-based AI model to adapt to new terms and changes in the legislative process

Data requirements:
- Database of current and past legislative processes, bills and acts
- Real-time user query data for ongoing learning and adaptation

Integrations with other systems:
- Existing legislative database and search infrastructure of the Senate website
- LLM-based AI processing systems and models
- User interface components for displaying query results

Success metrics:
- Query response time
- User satisfaction ratings and feedback
- Accuracy and relevance of query results
- Reduction in user queries requiring manual intervention or support

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual

project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Natural-language querying of external data sources

Use case ID: 030
Author: Senate of Italy
Date: 12 June 2024

Objective:
Enable users to query external data sources, such as the Italian National Institute of Statistics (ISTAT) website or the Normattiva website (portal of current laws), using natural language, in order to enhance accessibility and the user experience by allowing intuitive, human-like interactions with external datasets.

Actors:
- Senate website users (citizens, researchers and journalists)
- Senate IT and web development team

Prerequisites:
- Access to external data sources via application programming interfaces (APIs) or web scraping
- Trained large language model (LLM)-based artificial intelligence (AI) model for understanding and processing natural-language queries
- Internet accessibility for users

Scenario:
1. The user accesses the Senate website.
2. The user enters a query in natural language (e.g. “What is the latest unemployment rate according to ISTAT?”) in the search bar.
3. The LLM-based AI model processes the natural-language query to understand the intent and key terms.
4. The AI system sends a request to the relevant external data source (e.g. the ISTAT website) to retrieve the requested information.
5. The external data source returns the relevant data to the AI system.
6. The AI system formats the data and presents it to the user in a user-friendly format.
7. The user can refine their search or ask follow-up questions in natural language to obtain more specific information.

8. The system logs the query and results for continuous improvement of the LLM-based AI model.

Alternate flows:
- If the LLM-based AI model cannot understand the query, it prompts the user to rephrase or provides suggestions.
- If the external data source is unavailable or returns incomplete data, the system informs the user and suggests alternative sources.

Expected results:
- User satisfaction is improved owing to quick and accurate responses to queries from external data sources.
- Usage of the Senate website's search functionality for accessing external data is increased.
- It takes less time and effort for users to find specific information from external datasets.
- Accessibility for users unfamiliar with querying technical databases or websites is improved.

Potential challenges:
- Ensuring the LLM-based AI model can accurately understand diverse phrasing and terminologies related to external datasets
- Handling queries that require complex data processing or multiple external sources

Data requirements:
- Historical queries and user interactions for training and improving the LLM-based AI model
- Access to APIs or web scraping tools for retrieving data from external sources
- Real-time user query data for ongoing learning and adaptation

Integrations with other systems:
- LLM-based AI processing systems and models
- APIs or web scraping tools for accessing external data sources
- User interface components for displaying query results

Success metrics:
- Query response time
- User satisfaction ratings and feedback
- Accuracy and relevance of query results from external data sources
- Reduction in user queries requiring manual intervention or support

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Translation of natural-language queries into SPARQL queries for parliamentary open data

Use case ID: 042
Author: Senate of Italy
Date: 18 June 2024

Objective:
Develop an artificial intelligence (AI) system capable of translating natural-language queries into SPARQL[2] queries, enabling users to interact with parliamentary open data stored in a structured ontology, and enhancing the accessibility and usability of the data.

Actors:
- Parliamentary researchers
- Members of the public interested in parliamentary data
- AI development team
- Data ontology specialists

Prerequisites:
- Comprehensive ontology representing parliamentary data
- Natural language processing (NLP) or large language model (LLM) system trained on parliamentary language and SPARQL syntax
- Access to the parliamentary open data repository

Scenario:
1. The user inputs a natural-language query (e.g. “What were the voting results for the health reform bill in 2023?”).
2. The system processes the input using an NLP or LLM model, identifying key entities and the intent of the query.
3. The system translates the processed query into a corresponding SPARQL query.
4. The SPARQL query is executed against the parliamentary data ontology.

[2] SPARQL is a structured query language specifically designed for accessing remote datasets.

5. The system retrieves the relevant data and presents it to the user in a user-friendly format, such as a table or a summary.

Alternate flows:

- If the natural-language query is ambiguous or incomplete, the system requests clarification or additional information from the user before proceeding with the translation.
- If the requested data is not available or the ontology does not cover the query scope, the system informs the user and suggests possible modifications to the query.

Expected results:

- Access to parliamentary data is improved through an intuitive interface.
- Engagement and transparency are increased by making data easily accessible to non-experts.
- Relevant data are efficiently retrieved and presented, saving time for researchers and the public.

Potential challenges:

- Ensuring the accuracy of the model in understanding and translating queries
- Handling complex or multi-faceted queries that may not map directly to SPARQL
- Maintaining the system's ability to understand and translate evolving parliamentary language and new data structures

Data requirements:

- A detailed and up-to-date ontology of parliamentary data
- A large dataset of historical queries and corresponding SPARQL queries for training the NLP model
- Continuous updates to both the model and the ontology to handle new data and queries

Integrations with other systems:

- Integration with the existing parliamentary data repository
- Interfaces for both web-based and mobile applications for user interaction
- Analytics tools for monitoring system performance and user interaction patterns

Success metrics:

- Accuracy rate of translated SPARQL queries
- User satisfaction scores based on query results
- Reduction in time taken to retrieve relevant parliamentary data
- Number of queries successfully processed without requiring human intervention

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Interactive AI-powered parliamentary data visualization with GraphRAG

Use case ID: 063
Author: Council of Representatives of Bahrain
Date: 6 October 2024

Objective:
Automatically visualize parliamentary open data using GraphRAG technology by creating interactive node-based representations of bills and their associated discussions, videos and audio recordings. This enhances transparency and accessibility for users, enabling efficient navigation of legislative data.

GraphRAG (retrieval-augmented generation) is an advanced approach to information retrieval and generation that combines graph-based knowledge representations with language models.

Actors:
- Parliamentary staff members
- MPs
- Citizens
- AI development and support team

Prerequisites:
- Access to comprehensive datasets of parliamentary bills, discussions, videos and audio files
- Pre-defined criteria for linking bills to discussions and media content (e.g. bill titles, dates, debate keywords)
- Pre-trained AI models for content association and graph creation
- Integration with parliamentary document and media management systems

Scenario:
1. A parliamentary staff member uploads a set of bills, discussions and media files (video clips and audio recordings) to the system.

2. The staff member specifies criteria for linking discussions and media to each bill, such as keywords, dates or representative names.
3. The AI system processes the documents and media using GraphRAG technology to create a node-based visualization.
4. The system identifies and links bills to related discussions, videos and audio, forming interconnected nodes.
5. The visualized data is presented in an interactive graph format, where each bill and discussion is represented as a node.
6. Users can click on nodes to drill down and explore linked content, accessing discussions, video clips or audio recordings associated with each bill.
7. MPs and authorized users can search for specific bills or discussions, and citizens can explore public data for insights.

Alternate flows:

- If unsupported file formats are uploaded, the system prompts the user to convert them to compatible formats before processing.
- Users can filter or customize their view by topic, date or representative to streamline navigation.

Expected results:

- Increased accuracy and speed in linking parliamentary bills with relevant discussions and media
- Improved accessibility and searchability of legislative data for both parliamentary staff and the public
- Reduced manual workload for staff in organizing and retrieving legislative content

Potential challenges:

- Ensuring the AI system correctly links bills with discussions and media, especially in cases of ambiguous or complex references
- Managing scalability as the volume of bills and media content grows over time
- Seamlessly integrating the AI system with existing parliamentary document and media management systems

Data requirements:

- Historical parliamentary bills, discussions, videos and audio for model training
- Metadata for bills (e.g. title, date, summary) and media content (e.g. topic tags)
- Ongoing updates to parliamentary data to ensure the graph remains current

Integrations with other systems:

- Parliamentary document and media management systems
- User authentication and access control systems

Success metrics:

- Accuracy of node connections between bills, discussions and media content
- Reduction in time taken for users to find relevant bills and discussions
- Increased engagement from MPs, staff and citizens in exploring parliamentary data
- User satisfaction scores from parliamentary staff, MPs and citizens

The *Use cases for AI in parliaments* collection is published by the IPU's Centre for Innovation in Parliament as part of the Parliamentary Data Science Hub's project to create guidelines for AI governance in parliaments.

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Cybersecurity and application development

Inter-Parliamentary Union
For democracy. For everyone.

Use case for AI in parliaments

Narrowing of the attack threshold for parliamentary applications

Use case ID: 045
Author: Parliament of Finland
Date: 1 July 2024

Objective:
Narrow the attack threshold for parliamentary applications by using automated static application security testing (SAST) to ensure the quality of developers' application code and to detect potential security gaps in the source code.

Actors:
- Software vendor's developers
- Parliamentary IT office staff
- Artificial intelligence (AI)-powered SAST tool

Prerequisites:
- SAST licences acquired, application installed, and access to the product for developers
- SAST check configured as mandatory
- All SAST tool requirements (e.g. for organization, projects, main branches, code quality and metrics) met
- SAST tool forming an integral part of the everyday coding process, and familiar to and desired by developers
- A resource for checking that corrections are made according to the results produced by the SAST tool and revalidated

Scenario:
1. The software developer opens the SAST tool from a specific address.
2. The software developer logs into a specific organization with the given credentials.
3. The SAST tool analyses the code as the developer works with each new commit and warns of any code quality and security issues based on their type and severity.
4. The software developer fixes the problems in code quality and/or security issues and revalidates.

5. When the intended coding task is completed, the software developer logs out of the tool.

Alternate flows:

- All new or changed lines are considered new code. Note that when existing code is modified, old problems may appear. They are also prioritized because, this way, the entire codebase is gradually cleaned up with little effort.

Expected results:

- Applications are more secure, with fewer security holes exposing the organization to attacks.
- Coding is more efficient and code quality is improved.
- A new policy is implemented, through which the organization improves the reliability of its software development process.

Potential challenges:

- Gaps in the definitions of tool presets
- Excessive reliance by software developers on the SAST tool's detection ability, which could lead to the software product having security flaws that the SAST could not warn about
- Slow-down in the software development process if the developer is not used to using the tool

Data requirements:

- To analyse the new code, the SAST needs a reference point, which can be either the previous version number or the time.

Integrations with other systems:

- Coding platform
- SAST system
- Multi-factor authentication (MFA)

Success metrics:

- Did the amount of software code per sprint increase as the project progressed?
- How many vulnerabilities are there in the code during a sprint?
- How many critical vulnerabilities per sprint?
- Has a successful security audit been carried out by a trusted third party?

A use case describes how a system should work. It is used to plan, develop and measure implementation. A use case is not the same as a case study, which is a descriptive text of an actual project's implementation. Please note that this use case is provided "as is" and neither the IPU nor the author accepts any responsibility for its use.

For more information about the IPU's work on artificial intelligence, please visit www.ipu.org/AI or contact innovation@ipu.org.

INTER PARES
Parliaments in Partnership
EU Global Project to Strengthen the Capacity of Parliaments

This publication has been produced with the financial support of the European Union (EU), in partnership with the International Institute for Democracy and Electoral Assistance (International IDEA), as part of INTER PARES–Parliaments in Partnership, the EU's Global Project to Strengthen the Capacity of Parliaments.