International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 13 Issue: 02 | Feb 2026 www.irjet.net p-ISSN: 2395-0072

AI Based - Legal Document Analyzer

Shreya Sakpal[1], Nidhi Shinde[2], Unnati Shinde[3], Samruddhi Jadhav[4]

[1]*Shreya Sakpal Co, Viva Institute of Technology, Shirgaon, India*
[2]*Nidhi Shinde Co, Viva Institute of Technology, Shirgaon , India*
[3]*Unnati Shinde Co, Viva Institute of Technology, Shirgaon, India*
[4]*Samruddhi Jadhav Co, Viva Institute of Technology, Shirgaon, India*

Abstract - *Legal documents often use complex language, include long clauses, and contain important obligations that need careful interpretation. This makes manual analysis challenging and time-consuming, especially for those without legal training. Understanding these documents promptly is crucial to reduce legal risks and support better decision-making. Traditional document review methods usually depend on manual reading or simple keyword tools. These methods can be inefficient, prone to mistakes, and limited in context.*

This paper discusses the design and development of an AI-based Legal Document Analyzer that automates the analysis of legal documents using Natural Language Processing and large language model techniques. The system accepts documents in PDF and Word formats, as well as direct text input, allowing for flexible and uniform processing. It applies text preprocessing and semantic analysis to create concise summaries, extract key elements like involved parties and important dates, identify significant clauses, and spot potential legal risks.

Additionally, the system includes a Law Explorer module that identifies relevant legal provisions mentioned in the document and offers simple, context-aware explanations of applicable laws. This feature helps users gain a deeper understanding of legal concepts. By combining automated analysis with interactive exploration of legal knowledge, the proposed system increases efficiency, reduces manual work, and makes legal information more accessible. This solution is especially valuable for students, startups, and those without a legal background, providing useful insights and improving understanding of legal documents in real-world situations.

Key Words: **Legal Document Analysis, Natural Language Processing, Artificial Intelligence, Large Language Models, Law Explorer, Clause Extraction, Risk Detection**

1. INTRODUCTION

Legal documents are important in areas like courts, companies, educational institutions, and government organizations. Documents such as contracts, service agreements, terms and conditions, and legal policies are often detailed and hard to understand.

Reading and analyzing these documents takes a lot of time and legal knowledge.

With improvements in AI and NLP, computers can now understand and process human language to some degree. These technologies allow for the automatic analysis of large amounts of text data. Using AI and NLP in the legal field can help simplify the analysis of legal documents and reduce the need for manual work.

The AI Legal Document Analyzer proposed in this paper aims to automate the process of legal document analysis. The system assists users by extracting key information, summarizing content, and presenting the results clearly. This project seeks to make legal documents easier to understand and more accessible to both legal professionals and the general public.

2. Proposed System

The proposed system is an AI-based Legal Document Analyzer designed to help users interpret legal documents efficiently. Legal texts can be long and complex, which makes reviewing them manually challenging and slow. The system tackles this problem by providing an automated framework that analyzes legal content and extracts useful information in a structured way. Its purpose is to support users in understanding legal documents better, without taking the place of professional legal judgment.

Users can input legal content by uploading documents or entering text directly, providing flexibility. After receiving the input, the system changes the document into a standardized text format suitable for analysis. A preprocessing pipeline organizes the content by separating sections, identifying sentence boundaries, and getting the text ready for further interpretation. This structured preparation ensures that the legal information is processed accurately and consistently.

Once preprocessing is complete, the system uses Natural Language Processing techniques to analyze the legal text. It identifies key clauses, contract conditions, responsibilities,

and references that are important to the document's purpose. Rather than just performing surface-level analysis, the system aims to understand the contextual meaning of legal statements, which helps in clearly identifying significant legal

components. The analyzed information is then organized into a readable output for the user.

The proposed system also features an optional Law Explorer tool that improves legal understanding. This tool provides simplified explanations of legal terms, acts, or sections found in the document. By offering contextual legal information within the system, the Law Explorer helps users clear up doubts and gain better insights into legal references. Overall, the proposed system reduces analysis time, improves clarity, and makes legal documents more accessible to students, professionals, and general users.

3. System Overview

The AI Legal Document Analyzer is a web-based system that combines document handling, language processing, and analysis into one workflow. It uses a modular design, where each part has a specific role and contributes to the overall analysis of documents. This design makes it clearer, easier to maintain, and better performing.

3.1 Document Input Module

The Document Input Module lets users upload legal documents or enter text manually. It supports common file formats and checks that uploaded documents are valid and readable. After verification, the module extracts the raw text from the document and sends it to the next processing stage.

3.2 Text Processing and Analysis Module

This module processes the extracted text. It removes unnecessary symbols, breaks the text into tokens, and gets the text ready for analysis. NLP models then analyze the content and identify key clauses, important terms, and meaningful patterns. This module is essential for understanding the legal content of the document.

3.3 Output and Visualization Module

The Output and Visualization Module shows the analyzed results to the user. It presents summaries, highlighted clauses, and organized legal information in a clear and simple format. This helps users quickly grasp the key points of the document without reading the entire text.

4. System Architecture

The AI Legal Document Analyzer has a layered design that promotes modularity, scalability, and efficient processing of legal documents. It has four layers: User Interface, Processing, Analysis, and Presentation. Each layer serves a specific purpose.

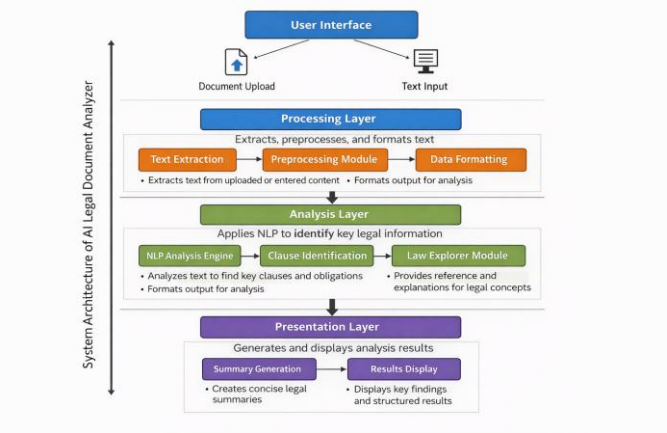

Fig 4.1: Legal Doc Analyzer Architecture

The **User Interface** allows users to upload legal documents (PDF, Word, or text) or enter text manually. It checks the entries and sends them to the processing module. The Processing Layer extracts, cleans, and organizes the text, fixing formatting issues to ensure accurate analysis.

The **Analysis Layer** is the main part of the system. It uses an NLP engine to find key clauses and obligations. It has a Clause Identification module to categorize important sections and a Law Explorer module for contextual explanations and legal references.

The **Presentation Layer** organizes and shows the analyzed results. It creates clear summaries and structured insights, helping users quickly understand the document and make informed decisions without needing deep legal knowledge. This design combines automation, smart analysis, and clear presentation to improve accessibility and efficiency in reviewing legal documents.

5. Implementation and results

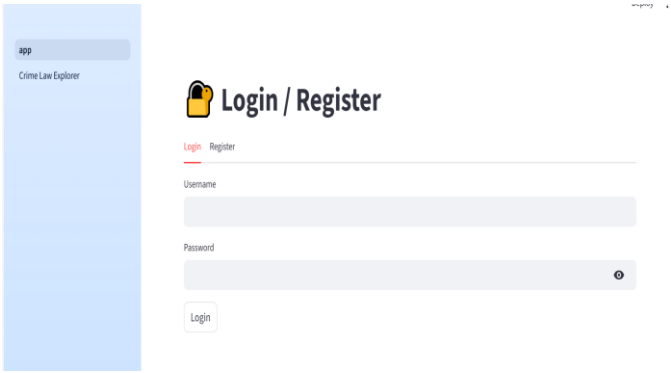

Fig. 5.1 Login Page Interface

This image shows the user authentication page where users can log in or register by entering their username and password to access the system.

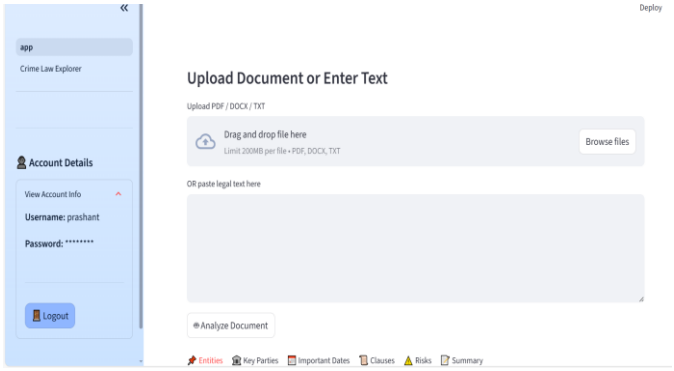

Fig. 5.2 Document Upload Interface

This screen allows users to upload a legal document (PDF/DOC/TXT) or paste legal text manually for analysis after logging into the system.

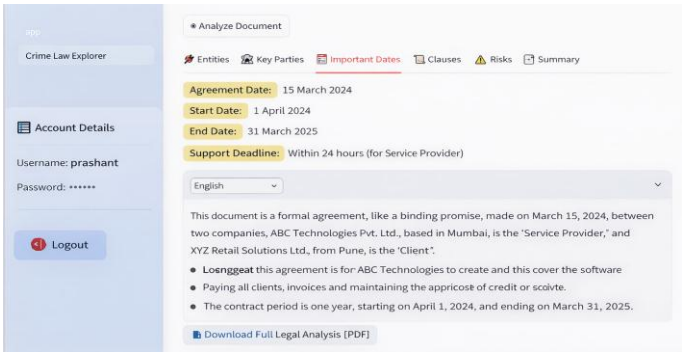

Fig. 5.3 Analysis, Summary &Detailed Output

This screen displays extracted important dates, an auto-generated summary, and a PDF download option for the full legal analysis.

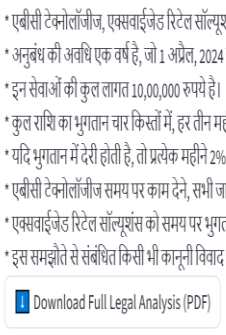

Fig. 5. Document Translation Interface

This screen shows the translated or detailed legal analysis and provides an option to download the full analysis report in PDF format.

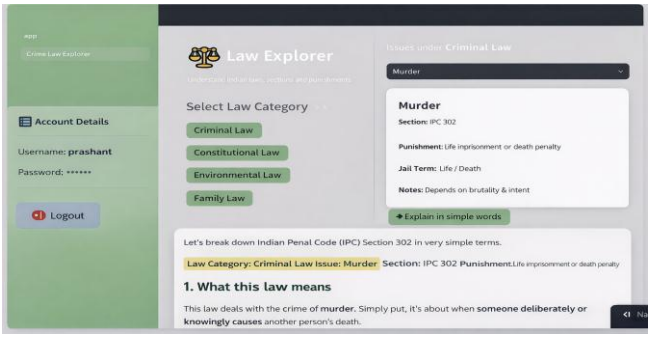

Fig. 5.5 Law Explorer

This screen displays the Law Explorer interface showing IPC Section 302 (Murder) details along with punishment information and a simplified explanation feature for better understanding.

6. CONCLUSIONS

The AI Legal Document Analyzer offers a smart way to automate the analysis of legal documents. It uses natural language processing, clause identification, and contextual legal insights. By using a layered architecture, the system is modular, efficient, and easy to interact with. This makes complex legal information accessible to users who do not have legal expertise.

This approach reduces manual work and analysis time while also improving accuracy in identifying important clauses and legal obligations. The proposed system shows how AI can change legal document review. It opens the door for more scalable solutions in the legal field.

7. Future Scope

1] Integration of multilingual NLP models to support legal documents from different languages and jurisdictions.

2] Implementation of an AI-based question-and-answer system for context-aware legal queries.

3] Addition of voice-assisted features using speech-to-text and text-to-speech technology.

4] Support for image uploads and real-time document scanning for automatic text extraction and analysis.

5]Enhancements to improve overall efficiency, accessibility, and real-world usability.

7. REFERENCES

[1] "Semantic Analysis of Legal Documents," ResearchGate, 2024:https://www.researchgate.net/publication/379452866_Semantic_Analysis_of_Legal_DocumentsPresents semantic techniques for understanding contextual meaning in legal text

[2] "Natural Language Processing for Automated Legal Document Analysis and Contract Review," Threws Journal of Information:https://journals.threws.com/index.php/IT/article/view/315Uses transformer-based NLP models for automated contract and clause analysis.

[3] "Automated Legal Document Analysis Using Natural Language Processing," International Journal of Scientific Research in Engineering and Management(IJSREM).:https://ijsrem.com/download/automated-legal-document-analysis-using-natural-language-processing/Applies NLP methods for legal text extraction, entity recognition, and summarization.