



LAWBOT (Your Friendly Legal Adviser)

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Abstract: LawBot is an innovative legal assistance chatbot designed to provide users with quick and accurate answers to their legal questions. Leveraging natural language processing (NLP) and machine learning algorithms, LawBot can understand user queries and provide relevant legal information, advice, and resources. The chatbot covers a wide range of legal topics, including but not limited to contract law, intellectual property, employment law, and family law. Users can interact with LawBot through a user-friendly interface, allowing for seamless communication and efficient retrieval of legal information. LawBot aims to democratize access to legal knowledge and empower individuals to make informed decisions regarding their legal rights and obligations. Therefore, it is advisable to consult a qualified lawyer for personalized legal advice tailored to your specific situation and jurisdiction.

IndexTerms- Legal ethics, Lawbot, intellectual Rights.

INTRODUCTION

The terms robot lawyer and lawyer bot are used as synonyms to lawbot. Lawbots use various artificial intelligence techniques or other intelligent systems to limit humans' direct ongoing involvement in certain steps of a legal matter. The user interfaces on lawbots vary from smart searches and step-by-step forms to chatbots. There are already hundreds of legal AI solutions that operate in multitude of ways varying in sophistication and dependence on scripted algorithms. The user interface on lawbot vary from smart searches and step by step forms to chatbot some lawbot also utilizes web searches technology, such as ChatGPT to provide higher accuracy for direct Questions. These technologies help lawbot to provide comprehensive and user friendly platforms for obtaining legal information. One of the key feature of many lawbot is intelligent chatbot which is programed to answer questions in plain language, making legal information more accessible to public. Lawbot is a broad class of customer-facing legal AI applications that are used to automate specific legal tasks, such as document automation and legal research. The terms robot lawyer and lawyer bot are used as synonyms to lawbot. Lawbots use various artificial intelligence techniques or other intelligent systems to limit humans' direct ongoing involvement in certain steps of a legal matter. The user interfaces on lawbots vary from smart searches and step-by-step forms to chatbots. Consumer and enterprise-facing lawbot solutions often do not require direct supervision from a legal professional. Some legal AI solutions are developed and marketed directly to the customers or consumers, whereas other applications are tools for the attorneys at law firms.

NEED OF THE STUDY.

A "LawBot" can serve as a valuable tool in various legal contexts, LawBots can quickly search through vast legal databases, statutes, case law, and legal literature to provide accurate and up-to-date information. They assist legal professionals, students, and the public in finding relevant legal materials efficiently. LawBots can offer preliminary legal advice based on predefined rules and legal principles. They can guide users on legal procedures, rights, and obligations. LawBots can help generate legal documents such as contracts, wills, and agreements. Users can input relevant details, and the bot produces customized documents. LawBots can aid in investigating cybercrimes, analyzing digital evidence, and tracking online offenders. They assist law enforcement agencies and legal professionals in handling digital forensics. LawBots can address legal issues related to cloud computing, data privacy, and cybersecurity. They help organizations navigate legal complexities in cloud contracts and data protection.

3.1 Data and Sources of Data

Frances Brazier in 2001 researched to indicate and explore some of the possibilities of using agents in today's and tomorrow's law offices. The main function of agents is, in general, to support the user. In this case, a lawyer. To be able to support a practicing

lawyer, however, not only is insight in daily practice required, but also understanding of practicing lawyers needs and desires. This position paper is meant to serve this purpose. It aims at getting response from practicing lawyers indicating what kind of support they are most interested.

Narendra Kumar and Dr. Pankaj Kumar in 2017 took an eye on the Recommendation systems that can take advantage of semantic reasoning-capabilities to overcome common limitations of current systems and improve the recommendations' quality. In this paper, we present a personalized-recommendation system, a system that makes use of representations of items and user-profiles based on ontologies in order to provide semantic applications with personalized services. The absence of super ordinate authorities having full access and control introduces some serious issues requiring novel approaches and methods. The role of web semantics here is that we introduce intelligent matching of the court case details. The search is not only thorough but also accurate and precise to the maximum level of attainment with the use of ontology designed exclusively for this purpose.

3.2 Theoretical framework

The theoretical framework of a LawBot involves a set of concepts, theories, and assumptions related to legal language, processes, and knowledge. LawBots are trained on extensive legal corpora, which include legal documents, statutes, case law, and legal literature. Pre-training involves exposing the model to this legal content, allowing it to learn patterns, semantics, and domain-specific vocabulary. After pre-training, LawBots undergo fine-tuning using legal dialogue question-and-answer datasets and judicial examination materials. Fine-tuning refines the model's understanding of legal content and its ability to respond accurately to legal queries. The infusion of a proprietary legal domain vocabulary enhances the model's performance within the legal domain. Legal Research: LawBots assist researchers in parsing through extensive legal documents, understanding complex terms, and predicting outcomes based on precedents. Legal Education: LawBots create interactive educational content, answer legal queries, and prepare students for judicial exams. Legal Consultation: Initial legal consultation by providing answers based on Indian law, improving access to legal services. Legal Document Review: LawBots review legal documents, identify key issues, analyze contracts, and draft preliminary legal documents.

RESEARCH METHODOLOGY

The methodology for creating a Lawbot involves a series of steps and considerations to design, develop, and deploy an AI-powered tool for legal assistance. Here's a general outline of the methodology:

1. Define Objectives and Scope: Clearly define the purpose and goals of the Lawbot. Identify the specific tasks it will perform (legal research, document analysis, legal advice, etc.).
2. Data Collection and Knowledge Base: Gather legal texts, case law, statutes, regulations, and other relevant legal information to build a comprehensive knowledge base. Ensure the accuracy and quality of the data sources to provide reliable information.
3. Natural Language Processing (NLP): Implement NLP techniques to process user input and understand the intent, context, and entities in the queries. Choose or build suitable NLP models for tasks like text classification, entity recognition, and sentiment analysis.

The integration of artificial intelligence (AI) into the legal profession holds immense potential. While AI-powered lawyers are not yet replacing human attorneys, they can significantly enhance efficiency, streamline tasks, and improve legal processes. Here are some proposed methods and tools for AI-powered lawyers: Automated Contract Review AI can analyse and review contracts, identifying critical clauses, discrepancies, and potential risks. It streamlines the process, reduces human error, and ensures consistency. Legal Research and Case Analysis AI tools can swiftly sift through vast legal databases, extracting relevant case law, statutes, and precedents. They provide lawyers with comprehensive insights, saving time and effort.

Predictive Analytics AI algorithms analyse historical legal data to predict case outcomes, settlement probabilities, and judge behaviour. Lawyers can make informed decisions based on these predictions. Document Automation-AI generates legal documents, such as contracts, pleadings, and briefs, based on predefined templates. It accelerates document creation and minimizes repetitive task. Natural Language Processing (NLP): NLP enables AI to understand and generate human language. Lawyers can use NLP powered chatbots for client interactions, answering common legal queries, and providing basic legal advice.



Fig.1. Flowchart for working of a lawbot

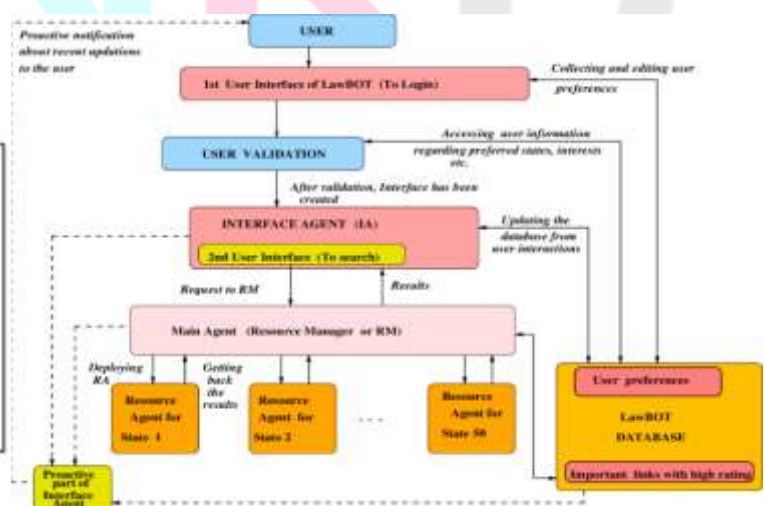


Fig.2. Block diagram for working of a lawbot

3.4 Statistical tools and econometric models

This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

3.4.1 Descriptive Statistics

Descriptive Statics has been used to find the maximum, minimum, standard deviation, mean and normally distribution of the data of all the variables of the study. Normal distribution of data shows the sensitivity of the variables towards the periodic changes and speculation. When the data is not normally distributed it means that the data is sensitive towards periodic changes and speculations which create the chances of arbitrage and the investors have the chance to earn above the normal profit. But the assumption of the APT is that there should not be arbitrage in the market and the investors can earn only normal profit. Jarque bera test is used to test the normality of data.

3.4.2 Algorithm

Natural Language Processing (NLP):

Text Processing: Understand the basics of text processing, including tokenization, stemming, and lemmatization.

NLP Libraries: Familiarize yourself with NLP libraries like NLTK (Natural Language Toolkit) and spaCy for text analysis and processing.

Database Knowledge:

Database Basics: Understand the basics of databases, as you may need to store and retrieve data during your project.

SQL: Familiarity with SQL may be useful if your project involves interacting with a database.

Machine Learning Basics:

Machine Learning concepts, including supervised learning, unsupervised learning, classification, and feature engineering.

Keyword extraction (also known as keyword detection or keyword analysis) is a text analysis technique that automatically extracts the most used and most important words and expressions from a text. It helps summarize the content of texts and recognize the main topics.



RESULT

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