ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor (RJIF): 8.4
IJAR 2025; 11(5): 263-271
www.allresearchjournal.com
Received: 16-03-2025
Accepted: 19-04-2025

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Legal eagle: A digital law assistant

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DOI: https://www.doi.org/10.22271/allresearch.2025.v11.i5d.12570

Abstract
People from marginalized backgrounds often struggle to receive legal services due to low resources, language barrier and limited accessibility. Also, finding a lawyer can be a challenging task for both businesses and individuals. Many encounter significant obstacles in locating a suitable attorney that meets their specific needs, often due to a lack of accessible information. Typically, hiring a lawyer and Notary services requires an in-person meeting, which can be both time-consuming and costly. This study proposes designing and developing a digital law assistant specifically for underprivileged communities. The main goal is to efficiently address consumer's legal concerns, like traffic tickets and criminal allegations matter, by offering clear instructions and necessary steps.

Legal Eagle is a web-based, AI-driven legal assistant designed to streamline access to legal services. The platform utilizes Natural Language Processing (NLP) and Term Frequency-Inverse Document Frequency (TF-IDF) to interpret complex legal terminology and offer user-specific guidance. Through these technologies, it can identify relevant legal protocols and enhance user decision-making by analyzing legal documents and predicting possible case outcomes. Moreover, it supports Chat bot by Gemini that understands intricate legal terminology and provides personalized guidance, incorporating applicable legal sections and processes. This advanced system improves decision-making by evaluating legal documents, forecasting case results, and categorizing records. The paper discusses ethical implications for Al, emphasizing its revolutionary role in providing quick and accessible legal support.

Keywords: Artificial Intelligence (AI), Machine learning, Natural Language Processing (NLP), Digital Legal Assistant, Website, TF-IDF, Chat bot, Support Vector Machine Algorithm

1. Introduction

As technology and law become increasingly intertwined, this study introduces an innovative legal assistance platform that combines natural language processing, term-weighting techniques, and machine learning. More than just a technical innovation, this platform signifies a major shift in how legal support is delivered and accessed. Its key strength lies in understanding and processing complex legal language—tasks traditionally performed by legal professionals. The integration of NLP and TF-IDF techniques enables the system to process and analyse extensive legal documentation, supporting more informed and context-aware responses to user inquiries. The paper also investigates how these technologies can be applied to tasks such as contract analysis, predicting case outcomes, and classifying legal documents. Artificial intelligence is transforming conventional legal workflows by automating repetitive and time-consuming tasks allowing for quicker analysis and more efficient data handling, delivering remarkable gains in speed and accuracy. However, this advancement also brings new challenges. The paper addresses the ethical concerns and regulatory issues involved in integrating AI into the legal field.

This platform specifically developed to support marginalized communities by enhancing access to legal assistance. The results are presented through a dedicated website offering notary and legal services. Notaries facilitate a structured process for various services, including establishing business entities, creating CVs, forming limited liability companies (PT) and more. Additionally, the website enables users to book legal consultations and attorney services. Thus, designed as a virtual legal assistant, provides information on a range of legal issues, helps users understand legal procedures, hiring Lawyer and Notary services connects them with appropriate resources and assistance. Not only this, the website provides two login frameworks: one for those who are seeking Consultant or hiring a lawyer and another as a lawyer for clients. This allows lawyers to strengthen their practice as well as to assist those who are unable to afford legal representation and access to court system while generating income through the integrated Wallet section, where payments are made by the client after the services are rendered. With its user-friendly design and interactive features, the website aims to empower individuals to better navigate the legal system and exercise their rights.

1.1 Motivation
This research is driven by the goal of empowering marginalized communities in India by making legal assistance more accessible. By incorporating language options and providing support by Professional Lawyers, a categorized digital Law assistant that addresses civil, immigration, LGBTQ, and socio-economic issues, the project promotes fair and inclusive access to justice.
Additionally, by offering virtual legal consultations and consolidating legal resources in one platform, the system helps minimize barriers to legal support and representation.

1.2 problem statement
Marginalized communities often face financial barriers that limit their ability to obtain legal representation. To enable these groups to push for systemic change, it's essential to confront the structural inequalities embedded within the legal system. Utilizing technology to spread legal knowledge can help close the accessibility gap for those with limited resources. Additionally**,** language differences pose significant communication challenges for both clients and legal practitioners. Moreover, the growing demand for fast and reliable legal support, especially for those lacking direct access to legal resources, highlights a significant shortfall in the existing legal system.
This approach aims to connect intricate legal information with the individuals who need it most, reshaping the way legal aid services are delivered.

1.3 Objective
Improving access to legal information focuses on making. it less difficult for people without legal expertise to decipher. And obtain assistance they require. This requires. Making complicated legal language into easier information in a clear, user-friendly format.
By utilizing, highly Advanced Language Processing (NLP) and TF IDF. These methods used to cache and reuse legal. We can speed up legal document analysis and search. These Technologies allow the delivery of accurate, reliable legal advice designed for each user's specific questions and. concerns. Providing timely, relevant and easy to understand legal information allow users to make informed decisions and enable smoother decision making. Additionally, it's crucial to consider ethical and. Ensure AI-powered legal support with regulatory factors. The system works inside the law and keeps user trust.

2. Related Works
The use of Machine Learning in law Assistance has gained significant attention, especially in recent years. The domains of Computational Linguistics and retrieval of data. This section analyses critical studies contributions that support the development of technologies such as the legal aid chat bot.
Bhattacharya and colleagues explored algorithms for summarizing judicial texts, offering insights applicable to simplifying legal documents in this research. Their findings provide a methodological foundation for enhancing readability and user comprehension within legal AI tools.
The hierarchical classification model proposed by Wang *et al*. demonstrates valuable potential for building AI systems capable of identifying and categorizing legal issues based on contextual cues within user input. Their methodology offers critical insights into enabling the chatbot to analyze and categorize legal situations.
Kayalvizhi and colleagues studied using word embeddings in support legal assistance. Their methods for processing the law and other users from the respective domain create a chat bot to learn after legal word embeddings respond to legal queries.
Shao and Ye focused on information retrieval techniques for locating relevant statutes and precedents—core capabilities for the proposed chatbot. Their findings inform strategies for accurate and efficient legal information sourcing.
Renjit and Idicula introduced a document-level embedding approach for analyzing legal texts, enhancing the chatbot's ability to assess document similarity and deliver contextually accurate advice.
Zhao *et al*. contributed to improving legal information retrieval through the BM25 algorithm, reinforcing the chatbot's search functionalities by supporting more precise and efficient retrieval of legal content.
Finally, more *et al*. proposed a method for identifying relevant legal cases by removing named entities, offering a unique strategy for filtering and pinpointing applicable precedents from large legal datasets.
These studies provide a strong basis for the legal aid chat bot, providing valuable techniques and insights to improve legal information access, comprehending and analyzing.

3. Methodology
The creation of the Digital Legal Assistant is guided by a clear way of doing things that brings different things together parts of Machine Learning, Recommendation Systems, etc. Language Processing (NLP), Term Frequency Inverse Document Frequency (TF-IDF) and sophisticated Machine Learning techniques. The design of the website has to be effective in the conversion, performance and easy to use.

3.1 Programming Language: JavaScript is utilized for developing Machine Learning and Artificial Intelligence projects due to its extensive libraries that support data analysis, data manipulation, and the seamless implementation of ML and AI models. In this research, JavaScript frameworks are employed to implement various techniques used by a legal assistant.

3.2 Data Acquisition and Preprocessing: The initial phase entails assembling a thorough dataset of legal commentaries. The collected data is then cleaned to eliminate unnecessary or irrelevant content. Text normalization techniques—such as splitting words, reducing them to base forms, and removing redundancy—prepare the data for processing.

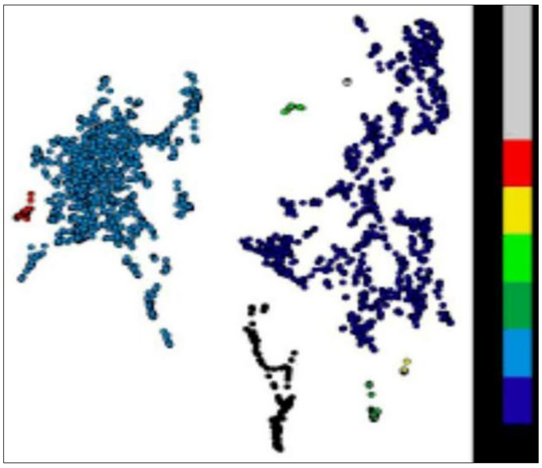


Fig 1: Scatterplot of Data in the process of feature extraction

3.3 Implementation of NLP and TF-IDF: Utilizing NLP and TF-IDF in our implementation, Natural Language Processing (NLP) and Term Deviation Frequency-Inverse Document Frequency (TF-IDF) shows important section of the website's functioning. NLP is used to analyse and understand the natural language. It analyses natural language in legal docs and user input. This process includes complex tasks like syntactic understanding the context through proper analysis and intricacies of legal language. By calculating term weights relative to document frequency, TF-IDF prioritizes key legal terminology during document analysis. It helps differentiate between general language and essential legal vocabulary, allowing the website to prioritize the most relevant information when answering queries. Together, NLP and TF-IDF empower the platform to accurately understand user questions and retrieve precise legal information from a large corpus of documents.

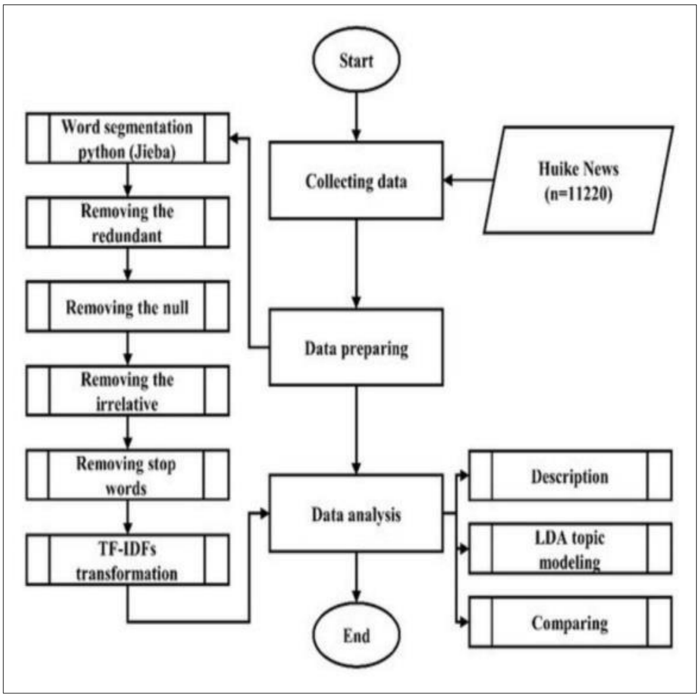


Fig 2: TF-IDF Architecture

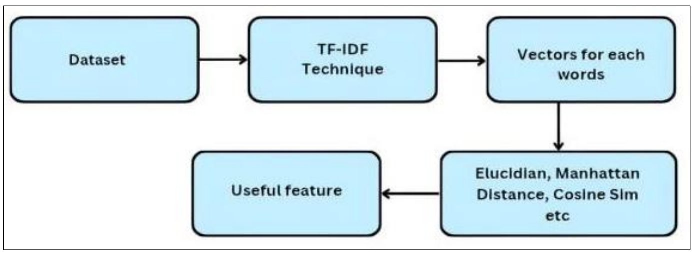


Fig 3: Data Processing Flowchart

3.4 Machine Learning Model Development: The process of developing machine learning models involves several stages, each with its own set of challenges and considerations. This data recording is utilized to train different machine learning algorithms. Categorize legal research and anticipate potential outcomes. In this specific situation, the impact is assessed in this particular context, such as auxiliary vector machine (SVM), decision-trees, neural network. Function engineering is a crucial aspect of this process and impacts the identification and extraction of the primary functions in the text, ultimately enhancing the performance of the model. This encompasses elements such as the regularity of legal conditions, the organization of legal claims, and the surrounding legal environment. After the model is trained and validated, it is incorporated into the platform structure, where it forms the foundation for processing and responding to user inquiries.

3.5 Testing and Evaluation: Rigorous testing is conducted to evaluate the website's efficiency which involves evaluating its accuracy in retrieving legal information, the importance of the guidance it provides and its ability to handle a variety of legal inquiries.

3.6 Ethical Consideration and Compliance: Ethical considerations and adherence to legal standards are emphasized throughout the development process. This involves safeguarding user data confidentiality and privacy, as well as identifying and mitigating any biases within the machine learning model.

3.7 Deployment and Continuous Improvement: The system was deployed via a responsive website, with continuous monitoring to track performance and usage. Regular updates are planned to reflect evolving legal frameworks and to incorporate advancements in AI, ensuring that Legal Eagle remains accurate, compliant, and user-friendly.

4. Results

The development of the Legal Eagle platform culminated in a fully functional, AI-assisted legal support website that facilitates access to notary services and legal consultations. The platform is divided into three main components: a public-facing client interface, a lawyer dashboard, and an administrative control panel.

4.1 Client Interface: Users accessing the client-side of the website can perform various actions, including account registration, browsing legal services, searching for lawyers, and booking consultations. The interface is designed to be intuitive, allowing individuals with limited legal knowledge to navigate options with ease. Users may submit service requests, select preferred time slots, and communicate directly with legal professionals.

4.2 Lawyer and Notary Dashboard

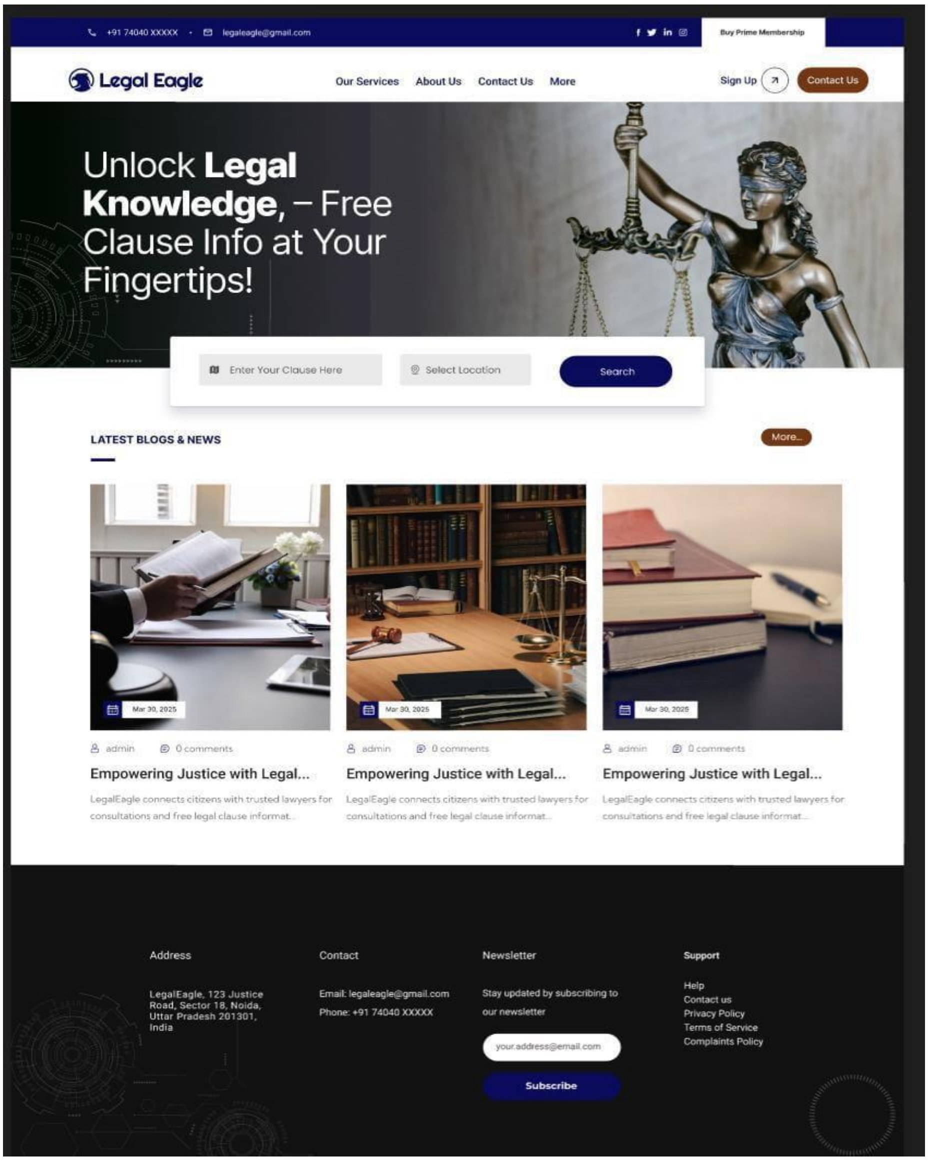
Legal professionals, including lawyers and notaries, are provided with a dedicated dashboard where incoming service requests are displayed. These professionals can review client details and either accept or reject consultation invitations based on their availability. The dashboard is optimized to streamline communication and service delivery, ensuring that legal providers can manage multiple client interactions efficiently.

4.3 Administrator Control Panel

The admin panel offers comprehensive oversight of the entire platform. Administrators have unrestricted access to System data and are able to perform create, read, Update, and remove (crud) operations. This includes managing user accounts (clients, lawyers, notaries), overseeing service orders, and maintaining database integrity. Admins can monitor platform usage and adjust services or features based on real-time user behaviour and system analytics.

4.4 Website Features

The platform includes essential functionalities such as:



Consultation Booking: Enables users to schedule legal advice sessions or request notary assistance.

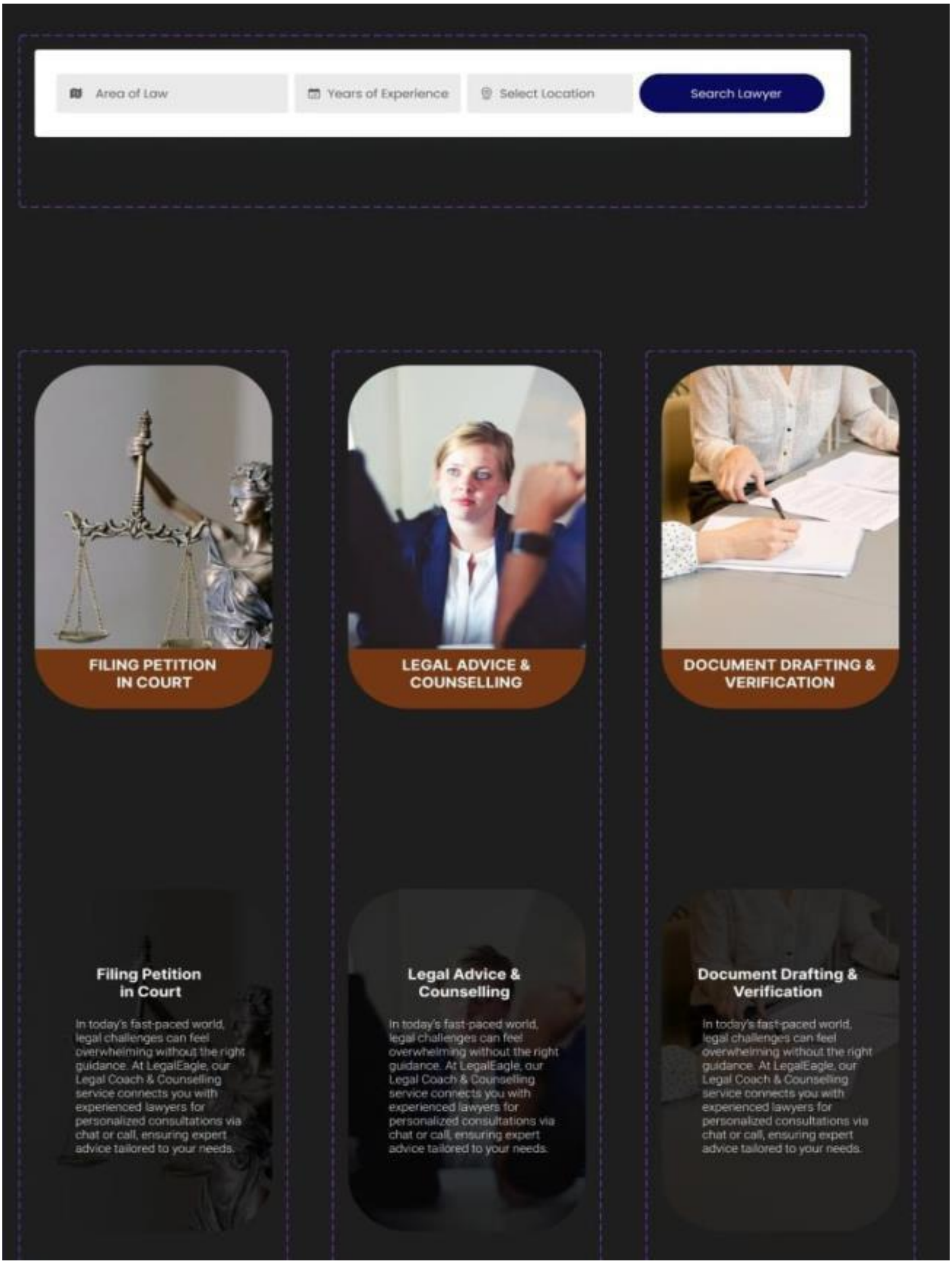
Legal Search Tools: Supports users in finding lawyers based on specialization, location, or availability.

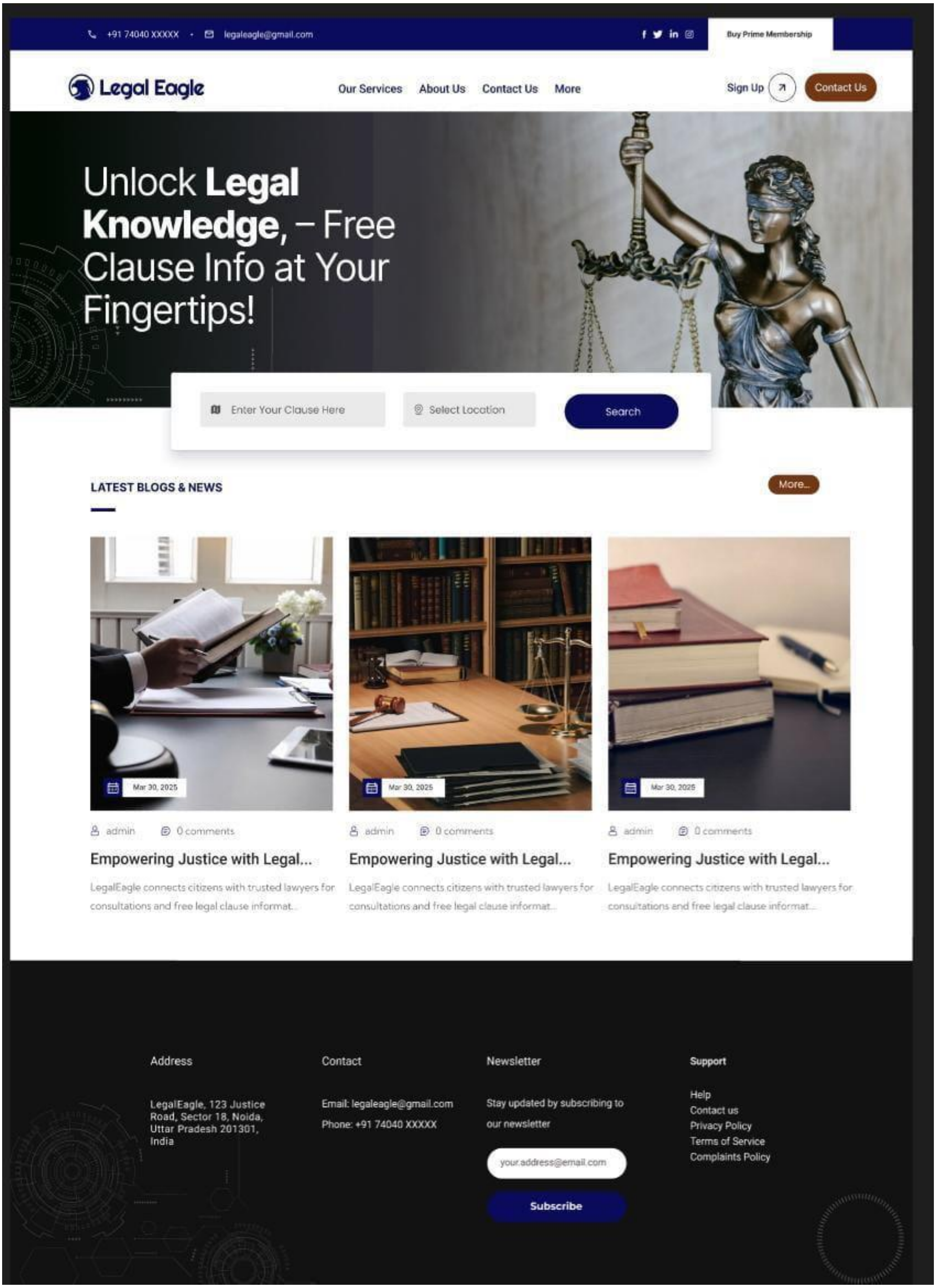
Integrated Payment System: Clients can securely pay for services using a wallet-based feature, which is activated once the service is confirmed.

Complaint Submission: A dedicated module allows users to file complaints regarding legal violations or service quality issues.

Gemini as Chat Bot: It generates contracts, NDAs, wills, leases, and other templates, supports multilingual and jurisdiction-specific queries, fills out legal forms using AI-assisted prompts. Provides summaries of case law, statutes, and regulations and many more.

Knowledge Base: FAQs and legal guidance articles help users understand procedures and rights before contacting a lawyer.

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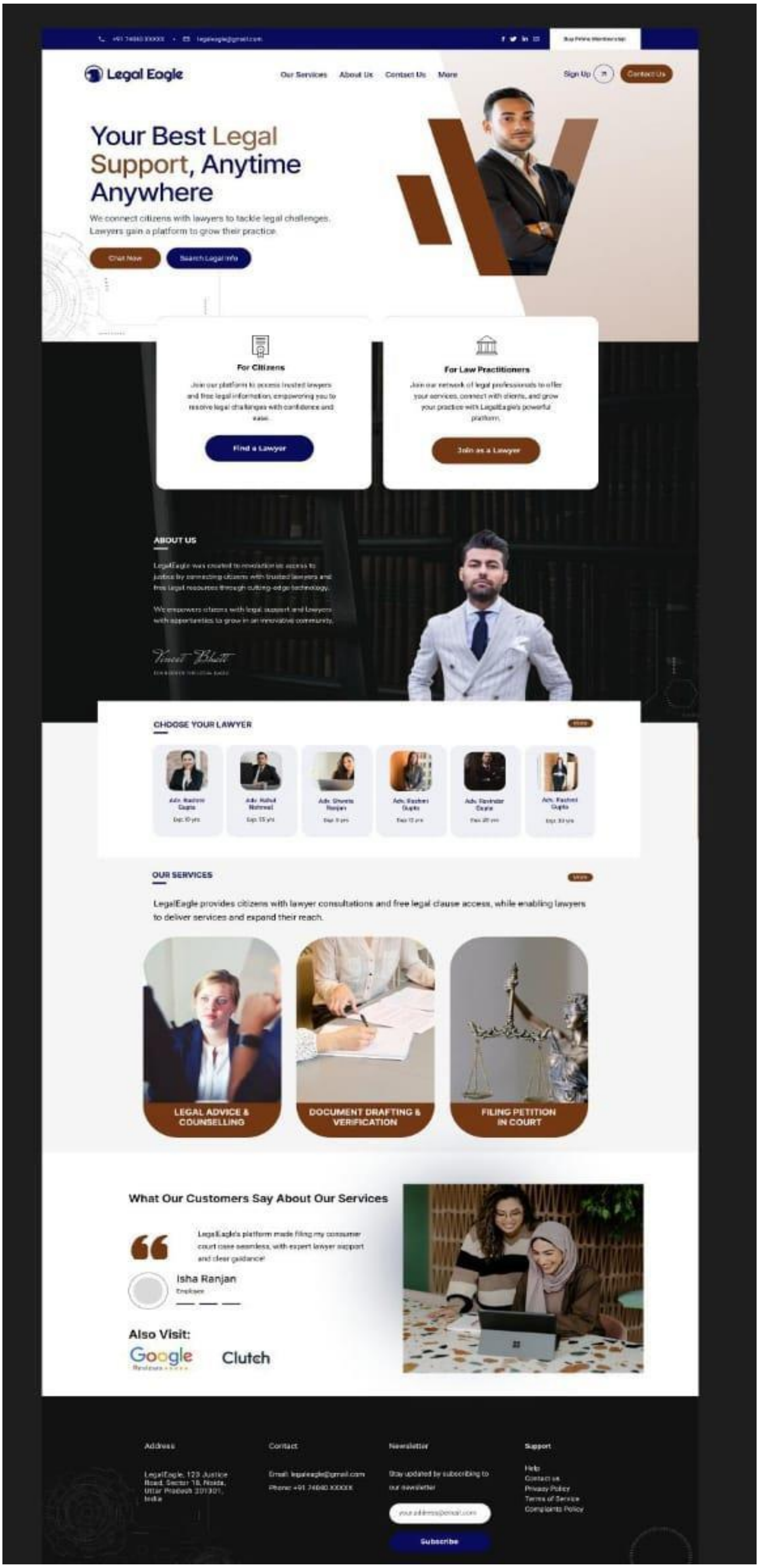

Fig 4: Snapshots of Legal Eagle Website

5. Discussion

The Legal Eagle website provides two primary services: the ability to request notary services and to hire legal counsel. In addition to these core functions, the website features a help section containing frequently asked questions related to the legal services offered that includes legal document classification and predicts possible legal outcomes. It also includes a complaint submission feature, enabling the public to report legal violations occurring within specific areas.

The platform is organized into three main components: the main website accessed by clients, the administrator dashboard, and a dedicated dashboard for notaries and lawyers. The main website is used by clients to initiate and manage transactions for notary and legal services.

Clients are required to log in before placing service requests. Upon logging in, clients may order notary services by providing a description of their legal issue and selecting a preferred consultation time. Payment must be made in advance to secure a consultation with a notary. The process for hiring a lawyer follows a similar structure; however, clients have the option to choose a lawyer based on their preferences. After submitting the request and completing payment, clients must await the lawyer's confirmation before proceeding with the consultation**.**

The dashboard for notaries and lawyers allows these professionals to view incoming service requests, including client details and proposed consultation schedules. They may approve or decline requests at their discretion.

Administrator dashboard provides extensive granting unrestricted access to all data within the system. Administrators are Granted full control to perform create, read, update, and manipulate and delete (remove) operations. These include adding new client, notary, and lawyer accounts; reviewing all user and service data in tabular format; updating records related to users and service orders; and removing data entries as necessary**.**

5.1 Accessibility and Inclusivity

One of the platform's most significant contributions lies in its ability to offer legal services to underserved communities. By removing geographical and financial barriers, the system ensures that users can seek notary and legal support from any location. The inclusion of multilingual support and simplified interfaces enhances accessibility for users with diverse linguistic and educational backgrounds.

5.2 Operational Efficiency

The division of the system into user-facing, administrative, and service-provider dashboards significantly improves operational flow. Clients can easily initiate service requests, while lawyers and notaries can manage appointments and deliver services efficiently. This structure minimizes delays typically associated with legal consultations and document processing.

5.3 Legal and Ethical Implications

As with any AI-integrated system handling sensitive data, ethical and legal responsibilities are critical. The platform enforces strict data protection protocols and incorporates user consent features for transparency. Additionally, measures have been implemented to detect and reduce potential algorithmic bias, ensuring fair and equitable responses.

5.4 Role of Automation in Legal Services

Automation plays a pivotal role in redefining how legal support is delivered. Features such as AI-driven legal search, document classification, and case prediction have the potential to significantly reduce the manual workload of legal practitioners. While automation accelerates service delivery, the system still allows human experts to remain in control, offering oversight and professional judgment when needed.

5.5 Limitations and Areas for Improvement

Although the current platform demonstrates high performance in handling common legal queries, it may require further enhancements to tackle more complex, jurisdiction-specific cases. Future iterations could benefit from integrating real-time legal databases, voice interaction features, and expanded support for regional laws.

6. Conclusion

The Legal Eagle platform presents a promising step forward in the digitization of legal support services. Through the integration of AI, NLP, and interactive web frameworks, the *Legal Eagle* platform effectively connects users with tailored legal services, addressing gaps in conventional legal support systems.

For clients, the platform acts as a convenient gateway to legal services—enabling them to locate lawyers, book consultations, and access essential notary functions online. For legal professionals, it serves as both a service tool and a business development platform, allowing them to showcase expertise, manage client interactions, and receive compensation through a secure digital wallet system.

Beyond practical functionality, Legal Eagle also promotes legal literacy and self-advocacy by offering a repository of legal resources, FAQs, and educational materials. These features empower users to make more informed decisions and engage with the legal system more confidently.

It addresses foundational barriers to justice such as language inclusion, financial limitations, and procedural complexity—thus contributing to a more inclusive legal ecosystem. Continued development and ethical governance will be key to ensuring its long-term impact and effectiveness across broader legal contexts.

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