AI-Powered Legal Information App - “Nyay mitra” (न्याय मित्र)

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Abstract

Law enforcement agencies often face challenges in correctly drafting First Information Reports (FIRs) due to the unavailability of legal experts at police stations. Incorrect citations of legal sections and acts lead to investigative inefficiencies and judicial complications. This paper proposes an AI-powered legal information system designed to assist investigating officers by providing real-time, reliable case law references, landmark judgments, and appropriate legal provisions based on spoken or written complaints. This system leverages Natural Language Processing (NLP) and Machine Learning (ML) to analyze complaint narratives and recommend the most relevant legal provisions, thereby enhancing FIR accuracy and expediting the judicial process.

Keywords—Artificial Intelligence, Legal Information System, FIR, Law Enforcement, NLP, LegalTech, Machine Learning, Justice

Introduction

Ensuring the accuracy of First Information Reports (FIRs) is crucial for a fair and efficient justice system. However, police officers, especially at lower levels, often lack the legal expertise to correctly identify and apply the relevant sections of law. This leads to errors in FIR drafting, affecting investigation quality and case outcomes. An AI-powered legal information system can bridge this gap by providing instant and accurate legal references.

This paper presents a proposed AI-based application that assists law enforcement personnel in drafting legally sound FIRs by analyzing complaints through text or speech input and generating relevant legal provisions using a pre-trained legal knowledge base.

Background and Problem Statement

Police officers in many jurisdictions struggle with FIR preparation due to:

1. Lack of legal expertise at police stations.

2. Errors in citing appropriate laws, affecting case proceedings.

3. Delays in legal consultation, causing inefficiencies in investigations.

The absence of immediate legal guidance often leads to flawed FIRs, which can weaken cases in court. The proposed AI-driven legal assistant can solve this issue by instantly recommending the correct legal sections based on complaint narratives.

Proposed Solution

We propose an AI-powered mobile and web-based application that:

1. Uses Natural Language Processing (NLP) to analyze complaint text or voice inputs.

2. Matches the input data with a pre-trained legal database containing case laws, acts, and landmark judgments.

3. Provides instant recommendations of relevant legal sections based on complaint context.

4. Offers explanations of legal provisions for better officer understanding.

System Architecture

The system consists of:

- Input Module: Speech/Text-based complaint entry.
- Processing Engine: NLP model trained on legal texts and case laws.
- Legal Knowledge Base: A structured database of laws, acts, and judicial precedents.
- Output Interface: Displays recommended legal sections and related cases.

Implementation and Methodology

The Nyay Mitra application is built using:

- Machine Learning Models: Google's Gemini API for legal text processing, classification, and IPC/BNS section mapping.
- Legal Knowledge Processing: NLP-based analysis to extract relevant legal provisions and provide simplified explanations.
- Speech-to-Text Integration: Google Speech-to-Text API to process verbal complaints and convert them into structured legal text.
- Image Processing: Google ML Kit and Gemini Vision API to extract text from uploaded legal documents and classify complaints.
- News Section: Integrated News API to fetch and display the latest legal news, case updates, and judicial rulings.
- User Interface: Flutter-based mobile application ensuring seamless UI/UX, with voice, text, and image-based input options.

Dataset and Training

The AI model will be trained using:

- Indian Penal Code (IPC) – Legal provisions and classifications of offenses.
- Code of Criminal Procedure (CrPC) – Procedural laws governing criminal cases.
- Bharatiya Nyaya Sanhita (BNS) – The updated legal framework replacing IPC with revised penal laws.
- Landmark Supreme Court and High Court Judgments – Case law references for legal interpretation.
- FIR Samples from Legal Records – Real-world complaint structures and classifications.
- Government Legal Documents & Acts – Official publications related to criminal, civil, and corporate laws.
- Legal Aid & Human Rights Reports – Guidelines on access to justice and fundamental rights.

Expected Outcomes

- Improved accuracy in FIR drafting.
- Reduction in legal errors leading to stronger investigations.
- Faster decision-making by law enforcement officers.
- A structured legal reference tool accessible at all times.

Conclusion and Future Scope

This AI-powered legal assistant aims to enhance the efficiency and accuracy of FIR registrations, reducing errors due to lack of legal expertise. Future work includes expanding the database to multiple jurisdictions and integrating predictive analytics for case progress monitoring.

References

Legal References

1. Bharatiya Nyaya Sanhita (BNS)
2. Indian Penal Code, 1860
3. Code of Criminal Procedure, 1973
4. Landmark judgments from the Supreme Court of India

Technical References (Docs & Tools)

4. Firebase Docs – Used for authentication, database, and backend services.
5. Google Gemini API Docs – Utilized for legal text analysis and AI-based complaint classification.
6. ML Kit Docs – Integrated for Optical Character Recognition (OCR) in image-based legal text extraction.
7. Speech-to-Text API Docs – Converts verbal complaints into text for processing.
8. Flutter Docs – Used for mobile and web application development.
9. News API Docs – Fetches real-time legal news updates.
10. RESTful API Docs – Facilitates communication between frontend and backend.
11. GitHub Docs – Version control and collaboration on project development.