

# **Project Title**

MyPocketLawyer: AI-Powered Legal Aid Assistant

## **Project Context**

Access to legal information is a basic right. However, many people in Nepal and similar regions do not have affordable or timely legal help. Legal documents are hard to understand, and legal aid centers face a large number of repetitive queries. With the rise of large language models (LLMs) and Retrieval-Augmented Generation (RAG), it is now possible to build intelligent systems that can provide simple and helpful legal information.

## **Project Summary**

MyPocketLawyer is a chatbot that uses AI to help people understand legal topics and documents. It can answer legal questions using real laws and legal resources. Users can also upload their legal documents (like contracts, notices, agreements) and ask questions about them. The chatbot gives simplified answers that are easy to understand.

## **Problem Statement**

Legal help is often too expensive, slow, and full of complex language. Many people are unable to read or understand legal documents. In Nepal, legal aid services face a heavy burden due to limited resources and high demand. According to the Nepal Bar Association and NGOs like Legal Aid Nepal, thousands of people approach legal aid centers each year with issues ranging from family disputes to labor rights. However, the ratio of legal aid lawyers to clients is extremely low, leading to long waiting times and many queries going unanswered. Reports highlight that rural communities are especially underserved, with most centers concentrated in urban areas. This overload results in delays, reduced quality of support, and leaves many citizens without timely access to justice.

## **Project Goals**

- Build an AI chatbot that gives correct legal answers using RAG
- Allow users to upload documents and ask related questions
- Provide clear and simple explanations of legal content

## **Application Areas**

- General legal help and awareness for citizens
- Understanding legal documents (contracts, agreements, notices)
- Support for NGOs and government helplines
- Legal guidance for employment and tenancy issues
- Access to legal schemes and support programs
- Help with startup legal compliance and freelancer contracts

## **Project Justifications**

- Reduces need for expensive legal help for basic queries
- Promotes legal awareness and access to justice
- Helps legal aid centers work more efficiently

- Meets real needs in both urban and rural areas
- Can grow into a public platform or commercial tool

### **Limitations & Constraints**

- Does not replace legal advice from a lawyer
- Only covers selected countries or regions (e.g., Nepal)
- May give wrong answers if data is outdated or unclear
- Needs translation support for Nepali and local languages
- Requires internet and device access

### **Expected Inputs**

Input Type	Description
Natural Language Queries	User questions like “Can my employer fire me without notice?”
Legal Documents	PDFs, DOCX files such as contracts, notices, agreements

## Expected Outputs

Output Type	Description
AI-generated Answers	Simple responses based on real legal documents
Document Summary	Easy-to-read breakdown of uploaded documents
Legal Flagging	Alerts on risky or unfair clauses
Legal Aid Suggestions	Suggest relevant legal actions and remedies

## What Users Can Do

- Ask legal questions
- Upload legal documents and understand them
- Learn about available legal help
- Know their rights and duties

- Get advice like “Is this clause legal?”

## Functional Requirements

Requirement	Details	Priority	Success Criteria
Legal Q&A	Answer questions using RAG from legal sources	High	Legal info is accurate and sourced
Document Upload	Upload and read legal files	High	File parses and is split correctly
Document QA	Ask questions about uploaded content	High	Answers come from that document only
Contextual Legal Suggestions	The system should analyze the user's current circumstances (input query, documents) and suggest	Medium	Users get relevant legal suggestions based on their circumstances

	relevant legal aid, rights, or next steps.		
History & Auth	Store previous chats and documents (optional)	Medium	Saved and retrieved using user login
Multilingual Support	Nepali and English language translation options	Medium	Accurate translations available

**Non-Functional Requirements**

Area	Details	Priority	Success Criteria
Accuracy	RAG must reflect real legal documents	High	90%+ accurate responses in top 3 results
Speed	Chatbot should reply quickly	High	95% of responses under 5 seconds
Usability	Easy-to-use interface for non-tech users	High	8/10 user satisfaction

Security	Protect legal documents and user data from unauthorized access.	High	Leverage Firestore's built-in rules to enforce role-based access and protect sensitive information.
Maintainability	Models and files should be easy to update	Medium	Admin can manage updates without errors
Accessibility	The system should be accessible on multiple platforms (web, mobile) and perform well on low-end or basic devices.	Medium	Responsive UI and readable language

**Performance Metrics**

Metric	Target
Accuracy of Answers	≥ 90%
Document Parsing Success	≥ 95% of files

Response Time	$\leq$ 5 seconds for 90% of queries
Legal Aid Match Rate	$\geq$ 80% relevant match rate

## Data Collection

### Required Data:

- Nepali laws (civil, labor, family, cyber, etc.)
- Legal guides and FAQs
- Case summaries and judgments
- Nepali-English legal glossary
- Government and NGO legal support materials

### Data Sources:

- Nepal Law Commission  
Link: [lawcommission.gov.np](http://lawcommission.gov.np)
- Supreme Court of Nepal  
Link: [supremecourt.gov.np](http://supremecourt.gov.np)



- Nepal Bar Association, Ministry of Justice  
Link:[nepalbar.org.np](http://nepalbar.org.np)
- NGOs like Legal Aid Nepal  
Link:[laccnepal.org](http://laccnepal.org)
- Public legal awareness documents and brochures

### **Acquisition Methods:**

- Web scraping of legal websites and documents
- Parsing PDFs with tools like PyMuPDF or pdfplumber
- Manual curation of FAQs and guides
- Public API use if available
- Translation and cleanup of legal content

### **Data Collection Challenges:**

- Many laws are in scanned PDF (need OCR)
- No open APIs for law retrieval
- Outdated legal terms or inconsistencies
- Need for bilingual support (Nepali + English)

## Benchmarking the Model

### Goal:

Evaluate chatbot performance in Nepal's legal context.

### Methods:

- Legal experts or students check answer correctness
- Use real FAQ examples from Nepal legal sources
- Test questions: property law, labor rights, domestic violence, etc.

### Retriever (for RAG) :

We'll experiment with different retrievers:

- BM25 (sparse retriever) – strong baseline keyword matcher.
- Dense retrievers:
  - *sentence-transformers/paraphrase-multilingual-MiniLM-L12-v2* → handles Nepali + English well.
  - *intfloat/multilingual-e5-large* → optimized for semantic retrieval across languages.
- Indexing with FAISS or Weaviate for vector search.

### Generator (LLM)

Candidate models for answer generation:

- OpenAI GPT-4o (or GPT-4.1) → high-quality reasoning, multilingual (can handle Nepali + English).
- Llama-3-Instruct (8B/70B, via HuggingFace or Ollama) → open-source option, fine-tunable if needed.
- Mistral 7B Instruct → lightweight, good for legal text summarization.

- If focusing on Nepali: test Indic LLMs (like ai4bharat/indic-llm or nepali-bert for embeddings).

### **Evaluation Metrics:**

- **Accuracy of Answers** – Percentage of correct answers verified by legal experts (target  $\geq 90\%$ ).
- **Response Time** – Avg. time taken per query; should be under 5 seconds for smooth use
- **Precision** – Proportion of retrieved answers that are actually relevant.
- **F1 Score** – Balances precision and recall to evaluate overall answer quality.
- **Clarity & Helpfulness Score** – Percentage of users who rate answers as easy to understand and useful.

### **Optional Comparison:**

RAG Chatbot vs. keyword-based search

### **Example:**

Q: "What's the punishment for cybercrime in Nepal?"

- RAG: Shows section + explanation in plain terms
- Keyword Search: Lists law names only

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