**AI-ML Implementation Tasks for Turn2Law Intern Applicants**

As a growing legal-tech startup providing instant access to legal services, Turn2Law needs innovative AI solutions to enhance our offerings. The following practical implementation tasks will help us identify talented AI-ML and LLM Engineers who can contribute to our mission.  
  
  
**Note: While applicants may choose to focus on one task, Turn2Law strongly prefers candidates who undertake at least two tasks. This demonstrates a broader skill set and adaptability, which are highly valued in our dynamic startup environment.**

**Task 1: AI-Powered Legal Chatbot**

**Project Objective:** Develop a RAG-based legal assistant chatbot that can provide accurate legal information and preliminary guidance to users.

**Requirements:**

* Implement a Retrieval-Augmented Generation (RAG) architecture
* Train the system on Indian legal codes, precedents, and regulations
* Ensure the chatbot can understand legal terminology and context
* Develop a user-friendly interface for client interaction
* Implement safeguards to prevent providing incorrect legal advice
* Include appropriate disclaimers about limitations of AI legal guidance

**Evaluation Criteria:**

* Accuracy of legal information provided
* Relevance of responses to user queries
* Ability to handle complex legal questions
* Implementation of proper citation of legal sources
* Overall user experience and interface design

**Task 2: Comprehensive Legal Research and Document Analysis System**

**Project Objective:** Develop an integrated AI system that combines advanced legal research capabilities with intelligent document analysis to streamline legal workflows, enhance decision-making, and provide comprehensive insights from various legal sources.

**Requirements:**

1. **Legal Research and Analysis Component:**
   * Implement natural language processing to understand complex legal queries
   * Develop a context-aware search algorithm to scan and analyze vast legal databases
   * Create a summarization feature that distills key points from case law and legal documents
   * Implement OCR capabilities to process scanned legal documents
   * Develop information extraction algorithms for identifying key clauses, parties, dates, and obligations
   * Integrate an LLM for logical reasoning and analysis of legal implications
   * Create a search functionality to retrieve relevant case laws and precedents
2. **Contract and Document Analysis Component:**
   * Build an AI-driven tool to automatically extract key clauses from contracts
   * Implement risk identification algorithms to flag potential issues in legal documents
   * Develop a compliance checker to ensure contracts adhere to corporate policies and regulations
   * Create a feature for comparing multiple contracts and identifying discrepancies
   * Design a user interface that highlights critical information and potential risks
3. **Integration and Workflow:**
   * Design an API that allows seamless interaction between all system components
   * Implement a unified dashboard that displays insights from legal research and document analysis
   * Create a system for generating comprehensive reports that combine research findings with document analysis results
4. **Performance and Usability:**
   * Ensure the system can process large volumes of legal text efficiently
   * Implement caching mechanisms to improve response times for frequent queries
   * Develop a scalable architecture that can handle increasing amounts of data and concurrent users
   * Design a user-friendly interface for inputting queries and displaying results

**Evaluation Criteria:**

* Accuracy of legal research results and relevance to input queries
* Precision in identifying and extracting key document clauses and potential risks
* Quality of logical reasoning about legal implications
* Speed and efficiency of processing for both research queries and document analysis
* Ability to handle various document formats and structures
* Effectiveness of the search and retrieval mechanisms
* User experience and intuitiveness of the integrated system
* Quality and clarity of generated summaries and reports
* Implementation of proper data security and privacy measures

**Bonus Features:**

* Incorporate machine learning to improve search results and document analysis over time
* Implement multi-language support for international legal documents
* Develop a feature for tracking legal precedents and their evolution over time
* Create visualization tools to show relationships between cases and legal principles
* Include prediction capabilities for potential case outcomes based on historical precedents

**Task 3: Smart Document Q&A System with News Integration**

**Project Objective:** Develop a comprehensive system that allows users to query legal documents and receive contextually relevant answers, supplemented by related legal news and fact-checking.

**Requirements:**

* Build a document Q&A system specifically optimized for legal contracts and documents
* Implement a legal news summarization feature that extracts relevant updates related to specific legal areas
* Create a fact-checking component that verifies legal claims against authoritative sources
* Utilize agentic frameworks (such as LangChain or [Crew.ai](http://Crew.ai)) to orchestrate multiple AI capabilities
* Design an intuitive interface that presents information in a clear, accessible manner
* Implement proper citation of sources for all information provided

**Evaluation Criteria:**

* Accuracy and relevance of answers to document queries
* Quality and conciseness of legal news summaries
* Effectiveness of the fact-checking mechanism
* Integration of multiple AI components into a cohesive system
* Overall user experience and interface design

**Task 4: Legal Precedent Analyzer**

**Project Objective:** Create a tool that can analyze case law to identify relevant precedents for current legal issues.

**Requirements:**

* Develop a system to process and analyze Indian case law documents
* Implement semantic search capabilities to find relevant precedents based on legal concepts
* Create visualization tools to show relationships between cases and legal principles
* Design features to track the evolution of legal doctrines over time
* Include prediction capabilities for potential case outcomes based on historical precedents

**Evaluation Criteria:**

* Accuracy in identifying relevant precedents
* Quality of semantic understanding of legal concepts
* Effectiveness of visualization tools
* Accuracy of predictive analytics
* Overall usability for legal professionals

**Submission Guidelines**

1. **Code Repository:** Submit your project via a GitHub repository with clear documentation
2. **Presentation:** Prepare a 15-minute presentation explaining your approach, challenges, and results
3. **Demo:** Include a working demo or detailed walkthrough of your implementation
4. **Future Improvements:** Outline potential enhancements or extensions to your solution

**Selection Process**

1. **Initial Screening:** Review of submitted projects based on technical implementation and innovation
2. **Technical Interview:** Selected candidates will be invited for a technical discussion about their implementation
3. **Team Fit Assessment:** Final evaluation of how candidates would integrate with the Turn2Law team
4. **Offer:** Top performers will receive internship offers with potential for future full-time positions

**We look forward to seeing your innovative solutions that can help Turn2Law revolutionize access to legal services in India through cutting-edge AI technology.**

smart\_doc\_qa/

├── backend/

│ ├── main.py # FastAPI backend entry point

│ ├── qna.py # Handles document Q&A

│ ├── news.py # Legal news summarization

│ ├── fact\_check.py # Fact-checking logic

│ ├── models/ # Stores AI models or embeddings

│ ├── utils.py # Helper functions

│ ├── config.py # Configuration settings

│ ├── requirements.txt # Backend dependencies

│ ├── Dockerfile # (Optional) Containerization

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├── frontend/

│ ├── src/

│ │ ├── components/

│ │ │ ├── Upload.js # File upload UI

│ │ │ ├── QueryBox.js # User input box

│ │ │ ├── Result.js # Displays results

│ │ ├── pages/

│ │ │ ├── Home.jsx # Main dashboard

│ │ ├── App.js # Main React component

│ │ ├── api.js # Handles API calls

│ ├── package.json # Frontend dependencies

│ ├── tailwind.config.js # TailwindCSS for styling

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├── data/ # Sample legal documents

│ ├── contracts/ # Legal contract samples

│ ├── cases/ # Case law samples

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├── README.md # Project documentation

├── .gitignore

**Problem Statement: Smart Document Q&A System with Legal News Integration**

**Background**

Legal professionals, businesses, and individuals often need to analyze lengthy legal documents, contracts, and case laws to extract relevant information. Manually reviewing these documents is time-consuming and prone to errors. Additionally, staying updated with the latest legal news and verifying legal claims against authoritative sources is crucial for making informed decisions.

**The Problem We Are Solving**

* **Difficulty in Extracting Relevant Information:**
  + Legal documents are often complex and lengthy.
  + Finding specific clauses, conditions, or legal interpretations requires expertise.
* **Keeping Up with Legal Updates:**
  + Laws and regulations change frequently.
  + It is difficult to track relevant legal news manually.
* **Ensuring the Accuracy of Legal Claims:**
  + Misinformation and misinterpretation of legal terms can lead to legal risks.
  + Fact-checking legal claims against trusted sources is essential.

**Solution: Smart Document Q&A System with Legal News & Fact-Checking**

We propose an AI-powered system that allows users to:  
✅ **Ask Questions about Legal Documents**  
✅ **Receive Contextual Answers Based on Document Contents**  
✅ **Get Summarized Legal News Updates**  
✅ **Verify Legal Claims with Fact-Checking Mechanisms**

**Key Features**

1. **Legal Document Q&A**
   * Uses **AI-powered NLP** (Gemini) to analyze legal contracts and documents.
   * Retrieves relevant sections to answer user queries.
   * Provides context-aware responses with citations.
2. **Legal News Summarization**
   * Fetches latest legal news from **trusted sources** (news APIs).
   * Summarizes key updates related to specific legal topics.
3. **Fact-Checking Legal Claims**
   * Compares legal claims against authoritative sources.
   * Ensures accuracy and reduces misinformation risks.

**Who Benefits?**

👨‍⚖️ **Legal Professionals** – Quick access to relevant case laws and legal updates.  
📑 **Businesses & Corporations** – Helps in contract review & compliance.  
🏛️ **Law Students & Researchers** – Efficient way to analyze legal materials.

**Technology Stack**

* **Backend:** FastAPI, LangChain, Gemini (Google AI)
* **Vector Database:** FAISS for document retrieval
* **Frontend:** React, Tailwind CSS
* **Legal News:** NewsAPI/Web Scraping
* **Fact-Checking:** Gemini AI with legal knowledge base

**Why Is This Innovative?**

✅ **AI-Powered Legal Q&A** – No need to manually scan documents.  
✅ **Real-Time Legal News Summarization** – Stay updated effortlessly.  
✅ **Fact-Checking for Legal Claims** – Ensure trustworthiness of information.