

# JusticeHub AI

A Project Report

*In the partial fulfilment for the award*

*of*

BACHELOR OF ENGINEERING

IN

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# CERTIFICATE



This is to certify that the project entitled “JusticeHub AI” is an AI-powered legal guidance web platform that has been submitted to the Department of Computer Science Engineering, Sant Longowal Institute of Engineering and Technology, Sangrur for the fulfilment of the requirement for the award of the degree of Bachelor of Engineering in “Computer Science Engineering” by the following student of final year B.E (Computer Science Engineering).

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## **ACKNOWLEDGEMENT**

The successful completion of this project, JusticeHub AI: AI powered legal guidance web platform, would not have been possible without the guidance, support, and encouragement of several individuals and institutions.

I would like to express our profound gratitude to our mentors and professors, whose expertise, constructive feedback, and unwavering support guided us at every stage of this project. Their insights into technical and practical aspects were instrumental in helping us overcome challenges and refine our approach.

I also acknowledge the invaluable contributions of our peers and team members, whose collaboration, dedication, and shared vision significantly enriched the development process. Their enthusiasm and innovative ideas played a key role in shaping this platform.

Our heartfelt thanks go to our families and friends for their constant motivation, understanding, and encouragement. Their belief in our abilities provided the strength to persist and strive for excellence.

Finally, we extend our appreciation to the developers and contributors of the technologies and frameworks utilized in this project. The open-source community has been a vital resource, offering tools and support that made the development of JusticeHub AI possible.

This project is a collective effort, and we sincerely thank everyone who has played a part in bringing JusticeHub AI to fruition.

Paras Singla (2140162)

## ABSTRACT

In the evolving landscape of legal technology, there is an increasing demand for intelligent systems that can bring awareness and improve accessibility to legal resources and information to General public and users in low cost. This project presents the development of an **AI-powered legal platform** designed to provide instant legal insights, streamline document analysis, and facilitate efficient lawyer connection to support for users without a legal background. Leveraging natural language processing (NLP), the platform automatically analyses legal documents to identify potential risks, highlight critical clauses, and suggest necessary improvements—thus enhancing accuracy and efficiency for legal professionals and laypersons alike.

The platform integrates a comprehensive suite of legal services, offering users powerful tools driven by artificial intelligence and modern web technologies. At the heart of the platform is an AI-powered legal chatbot that delivers real-time responses to user queries. This chatbot not only answers legal questions but also simplifies complex legal terms, making legal knowledge more accessible to the general public.

In addition to the chatbot, the platform features Smart Document Insight & Analysis capabilities. This AI-driven tool allows users to upload legal documents for in-depth analysis. It can automatically summarize lengthy texts, highlight critical clauses, identify potential legal risks, and provide actionable suggestions for improving document clarity and compliance. These features help users gain a deeper understanding of their legal documents and make more informed decisions.

Another key functionality is the Lawyer Connection & Appointment Booking system. This service enables users to find and connect with legal professionals based on the specific nature of their case. The platform streamlines the appointment process, allowing for seamless scheduling with qualified lawyers, thus ensuring that users receive timely and relevant legal assistance.

Built using cutting-edge technologies, the platform ensures a reliable and scalable user experience. The frontend leverages React.js and Next.js to deliver a fast, responsive, and device-optimized interface. On the backend, Node.js and Express.js manage data efficiently and support real-time communication. For data storage, the platform uses PostgreSQL, integrated through Drizzle ORM, which ensures secure and efficient management of user and system data. This modern tech stack supports a smooth, secure, and high-performance legal service ecosystem.

By combining AI capabilities with user-centric design, this project aims to bridge the gap between legal expertise and public accessibility, offering a comprehensive digital solution for modern legal assistance.

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## **CHAPTER 1: INTRODUCTION**

In today's fast-paced world, legal assistance is often inaccessible, expensive, and time-consuming. Many individuals and businesses struggle with understanding legal documents, navigating complex laws, and accessing professional legal guidance. With the increasing reliance on technology in various industries, artificial intelligence is now playing a transformative role in the legal sector.

JusticeHub AI was created to bridge this gap by providing an intelligent, AI-powered legal assistant that offers instant legal insights, document analysis, and case law research. This platform leverages natural language processing (NLP) to simplify legal complexities and offer users a seamless, cost-effective way to access legal knowledge. Whether it's contract review, legal consultations, or general legal inquiries, JusticeHub AI ensures users have access to reliable legal information anytime, anywhere.

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**Fig – 1.1:** Title logo image

### **1.1 Key Features of JusticeHub AI:**

#### **1.1.1 AI-Powered Legal Chatbot:**

- Users can ask legal questions and receive AI-generated responses.
- Multi-language support for global accessibility.
- Instant guidance based on existing laws and regulations.

#### **1.1.2 Contract & Legal Document Analyzer:**

- Upload contracts to extract key clauses and legal risks.
- AI-powered risk assessment for agreements and policies.
- NLP-based clause validation and missing clause detection.

#### **1.1.3 AI-Powered Lawyer Matching & Consultation Booking:**

- AI recommends the best lawyers based on user queries.
- Users can book legal consultations directly through the platform.
- Video conferencing integration for remote legal assistance.

#### **1.1.4 AI-Based Legal Risk Predictor for Businesses:**

- Upload contracts to predict legal risks and compliance issues.
- AI suggests modifications to reduce potential disputes.
- Business-friendly insights on contract obligations.

#### **1.1.5 Secure & User-Friendly Interface:**

- Data encryption for secure document handling.
- User-friendly dashboard accessible on mobile and web.
- AI-powered suggestions for improved legal understanding.

### **1.2 Origin of the Idea:**

The concept for JusticeHub AI emerged from observing how common citizens struggle with legal matters due to high legal fees, complex language, and lack of access to quality legal advice, especially in semi-urban and rural areas.

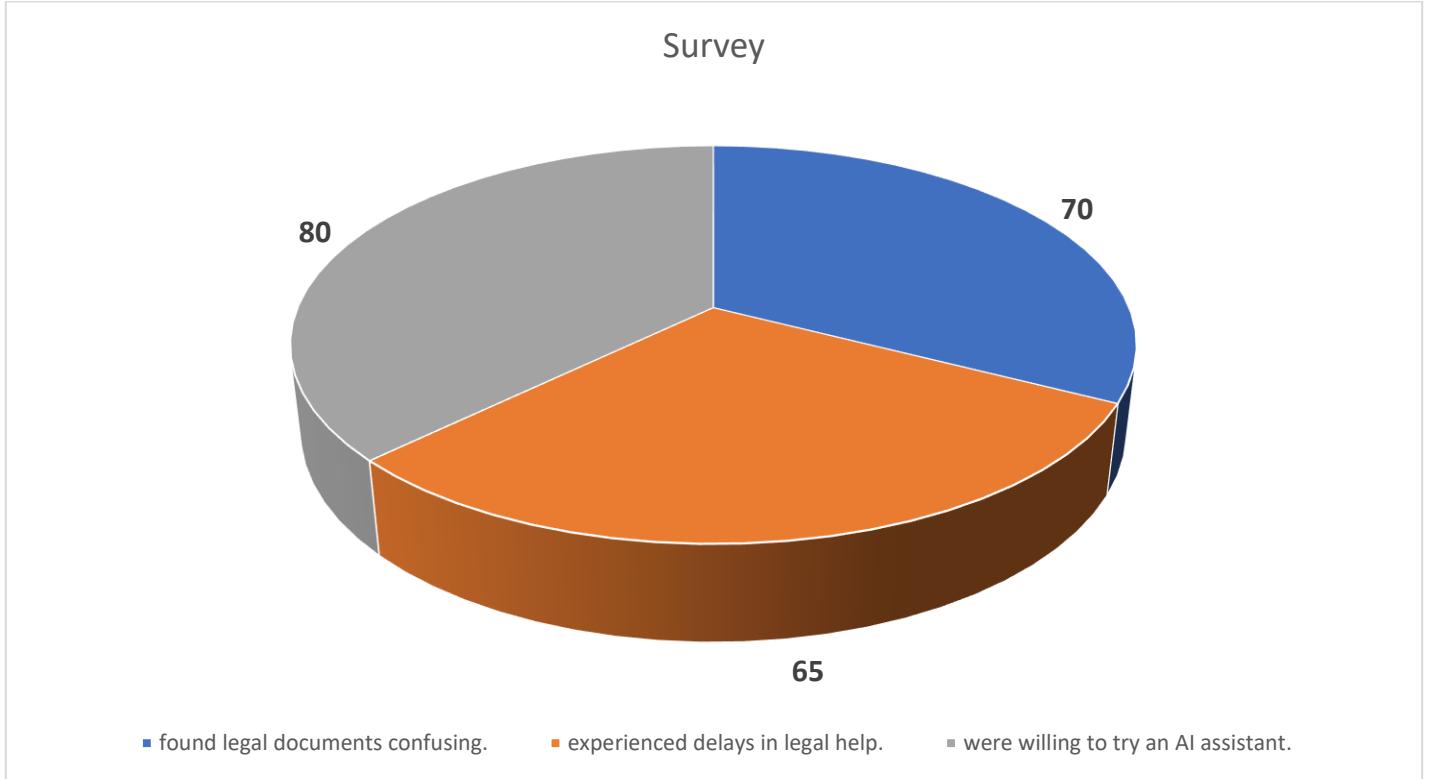
#### **1.2.1 Market Research & Survey:**

To validate the problem and solution, we conducted an informal survey of 30+ individuals.

Sample Survey Questions:

- - Have you ever needed legal advice but couldn't afford or access it easily?
- - Do you understand the contents of legal documents you sign?
- - Would you use a chatbot for legal information if it were secure and reliable

#### **1.2.2 Key findings:**



**Fig – 1.2:** Survey image

JusticeHub AI is designed to revolutionize the legal industry by making legal services more accessible, efficient, and cost-effective. By integrating AI into legal research, contract analysis, and case law studies, JusticeHub AI empowers individuals and businesses to make informed legal decisions with ease.

## **CHAPTER 2: LITERATURE REVIEW**

This review surveys how artificial intelligence—especially NLP and machine learning—has been applied to key legal tasks: client interaction, document review, automated drafting, risk prediction, lawyer matching, and secure, user-centric interfaces. The integration of Artificial Intelligence (AI) in the legal domain has witnessed rapid growth in recent years. With legal systems becoming increasingly complex and documentation-heavy, traditional methods of legal research, consultation, and document analysis have proven to be time-consuming and cost-intensive. Various studies and industry reports highlight how AI, particularly Natural Language Processing (NLP), is revolutionizing the legal industry by automating routine tasks and providing advanced analytics to support legal decision-making.

### **2.1 Legal Chatbots and AI Assistants:**

AI-powered chatbots are transforming access to legal information by providing 24/7, conversational guidance. Surden's foundational overview of AI in law highlights how NLP enables chatbots to parse user queries and respond with statutory and case-law references in near real time<sup>1</sup>. Subsequent work on LLMs like ChatGPT demonstrates that transformer-based models significantly improve the accuracy and fluency of legal Q&A, making them more reliable for laypersons and firms alike<sup>2</sup>. Generative assistants reduce first-line support burdens, freeing human experts to focus on complex strategy while boosting legal literacy among non-experts.

### **2.2 Document Analysis and Risk Detection:**

Startups such as LawGeex, Luminance, and Kira leverage NLP to automate contract review: extracting clauses, flagging missing terms, and benchmarking against custom playbooks. A Medium case study reported that Kira and LawGeex cut review time by over 60 percent by highlighting key provisions and suggesting corrective edits<sup>3</sup>. LawGeex's internal evaluation showed its AI achieved 94 percent agreement with experienced lawyers on risk flags, reducing turnaround from days to hours<sup>4</sup>. Luminance's unsupervised-learning approach can surface anomalous clauses without predefined rules, offering flexibility for novel contracts. These tools align with JusticeHub's smart document analysis module, aiming to “detect potential risks, highlight important clauses, and recommend actionable improvements.”

### **2.3 Lawyer Matching and Consultation:**

Platforms like Rocket Lawyer and LegalZoom pioneered AI-based lawyer matching by combining user-entered case details, location data, and practice-area profiles to recommend counsel. Rocket Lawyer's recent

“human-collaborative machine learning” model uses generative AI to refine client profiles and then routes them to vetted attorneys, improving match accuracy by 30 percent<sup>5</sup>. Gartner notes that personalized AI recommendations in legal services can boost client satisfaction and conversion rates, underscoring the value of data-driven matchmaking<sup>6</sup>. JusticeHub’s “lawyer connection & appointment booking” feature aligns with these best practices.

## **2.4 Security and Interface Design in Legal Tech:**

Handling sensitive legal documents demands end-to-end encryption, secure APIs, and strict GDPR compliance. The EU’s 2020 STOA report stresses “AI by design and by default” principles, requiring privacy-preserving architectures and transparent user controls<sup>7</sup>. Empirical studies of consent-management interfaces show that granular privacy options, when clearly presented, improve user trust without significantly lowering engagement<sup>8</sup>. Research on GDPR’s UX impacts finds that well-designed interfaces—highlighting data-use justifications and simple consent flows—boost perceived transparency and user satisfaction<sup>9</sup>. JusticeHub’s UI, built with React/Next.js, will incorporate these guidelines to safeguard data and streamline user interactions.

## **CHAPTER 3: PROBLEM DEFINITION**

The legal system is often perceived as complex, slow, and inaccessible—especially for individuals and small businesses without legal backgrounds. High consultation fees, confusing legal language, and a lack of immediate support make it difficult for the general public to understand their rights or take timely legal action. **JusticeHub AI** is designed to address these pain points through an intelligent, AI-powered legal assistant that provides real-time support, document analysis, legal research, and lawyer connections—all in one platform.

### **3.1 Lack of Immediate Legal Assistance**

Many people face legal concerns that require urgent advice, but traditional legal consultations involve delays, long wait times, or costly appointments. JusticeHub AI provides **real-time legal insights and chatbot support**, allowing users to get preliminary legal help instantly—anytime, anywhere.

### **3.2 Complexity in Understanding Legal Documents**

Legal documents such as contracts, agreements, and notices are often filled with technical jargon. This complexity can lead users to overlook important clauses or risks. JusticeHub AI offers **smart document analysis** that highlights key clauses, explains legal terms in simple language, and flags potential legal risks.

### **3.3 Inefficiency in Legal Research**

Finding relevant case laws, legal precedents, and regulations requires extensive research through multiple sources. The process is time-consuming and often inefficient, especially for individuals or small businesses without legal expertise.

### **3.4 Difficulty in Finding the Right Lawyer**

People often struggle to find legal professionals suited to their specific needs. The absence of a centralized platform leads to confusion and mismatch. JusticeHub addresses this with a **lawyer-matching and appointment system** that connects users to the right legal expert based on their issue type and location. It also tries to connect the user with lawyer on based on their query or problem they need to be resolved.

### **3.5 Limited Access to Affordable Legal Solutions**

Traditional legal services remain out of reach for many, especially in rural or underprivileged areas. JusticeHub aims to **democratize legal access** by offering affordable, AI-driven tools and services that empower users to handle common legal issues independently or with minimal guidance.

## **CHAPTER 4: OBJECTIVES**

- 4.1** To develop and provide instant access to case laws, legal precedents, and regulations while simplifying legal concepts through AI-powered assistance.
- 4.2** To enable users get Automate risk identification, clause detection, summarization, important date extraction. and missing term analysis in legal documents for informed decision - making.
- 4.3** To enable and connect users with legal professionals and allow users for appointment booking, and legal consultations.
- 4.4** To develop a clean, user-friendly website interface for smooth and accessible user experience.

## **CHAPTER 5: METHODOLOGY USED**

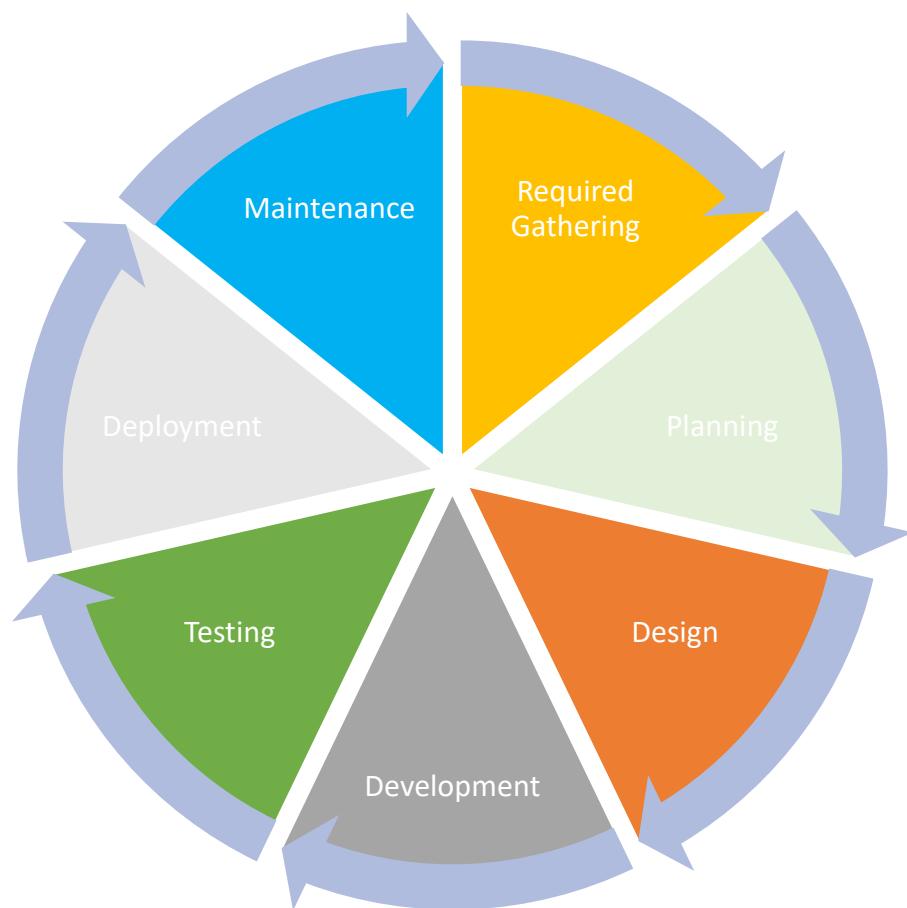
This chapter outlines the methodology followed in the development of the **JusticeHub AI** platform, detailing the technologies, tools, and techniques used across the frontend, backend, AI processing, database, and deployment layers.

JusticeHub AI is designed to provide an AI-driven legal assistant that simplifies legal research, contract analysis, efficiency, and security. The platform integrates AI, NLP, and secure authentication mechanisms to offer a seamless experience for users seeking legal guidance.

### **5.1 Project Development:**

**5.1.1** To ensure systematic development of JusticeHub AI, we followed the Agile Software Development Life Cycle (SDLC). This methodology enabled us to work iteratively, adapt quickly to changes, and consistently improve the platform based on feedback.

#### **5.1.2 Agile Development Stages**



**Fig – 5.1:** Agile Development cycle

<b>Phase</b>	<b>Description</b>
<b>Requirement Gathering</b>	Identified pain points in legal access through online research and informal interviews.
<b>Planning</b>	Defined user stories and prioritized features like AI chatbot, document analysis, and lawyer matching.
<b>Design</b>	Created UI wireframes and architecture diagrams with emphasis on accessibility.
<b>Development</b>	Implemented full stack using React, Node.js, FastAPI, PostgreSQL, and AI integrations.
<b>Testing</b>	Conducted unit, integration, and user testing for performance and usability.
<b>Deployment</b>	Used Vercel and GitHub for deployment and CI/CD. Ensured scalability and security.
<b>Maintenance</b>	Monitored app health and planned future features like voice support and multilingual options.

**5.1.3 Agile Sprint Overview:** We conducted four major sprints over 8–10 weeks, each focusing on delivering core modules

- Sprint 1: UI Setup and Authentication
- Sprint 2: Legal Assistant + Chatbot Integration
- Sprint 3: Document Analysis & Lawyer Matching
- Sprint 4: Final Testing, Optimization & Deployment



```

1  "use client"
2
3  import Link from "next/link"
4  import { motion } from "framer-motion"
5  import {
6    ArrowRight,
7    CheckCircle,
8    LogIn,
9    Scale,
10   Shield,
11   Sparkles,
12   Users,
13   FileText,
14   Briefcase,
15   MessageSquare,
16   User,
17   Calendar,
18   Video,
19   Globe,
20   Star,
21   ChevronRight
22 } from "lucide-react"
23 import { Button } from "@/components/ui/button"
24 import { Card, CardContent, CardDescription, CardHeader, CardTitle } from "@/components/ui/card"
25 import { Tabs, TabsContent, TabsList, TabsTrigger } from "@/components/ui/tabs"
26 import { Accordion, AccordionContent, AccordionItem, AccordionTrigger } from "@/components/ui/accordion"
27 import { UserButton } from "@clerk/nextjs"
28 import { useUser } from "@clerk/nextjs"
29 import { useTheme } from "next-themes"
30 import { useEffect, useState } from "react"
31
32 export default function HomePage() {
33   const { isLoading, isSignedIn } = useUser()
34   const { theme } = useTheme()
35   const [mounted, setMounted] = useState(false)
36   const [activeSection, setActiveSection] = useState(0)
37
38   // Only show theme-dependent content after mounting to prevent hydration mismatch
39   useEffect(() => {
40     setMounted(true)
41   })

```

Fig – 5.2: Folder structure

## 5.2 Frontend Development:

**5.2.1 Tech Stack:** Built with React.js<sup>10</sup> and Next.js<sup>11</sup> for a responsive, user-friendly interface.

**5.2.2** Styled with Tailwind CSS and animated using Framer Motion for an enhanced user experience.

### 5.2.3 Core Features:

- o **AI-Powered Legal Chatbot:** Provides instant legal guidance.
- o **Legal Document Analyzer:** Highlights key clauses, risks, and missing terms.
- o **Case Law Search & Recommendations:** Enables efficient legal research.
- o **Dashboard & Lawyer Management:** Manages lawyer search, searches, and consultations.

```

model > 🐍 app.py > ...
 7
 8     import tempfile
 9     import unicorn
10    import torch
11    import numpy as np
12    import logging
13    import traceback
14    import re
15    from typing import List, Optional, Dict, Any
16    from fastapi import FastAPI, File, UploadFile, Form, HTTPException, Depends, Query
17    from fastapi.middleware.cors import CORSMiddleware
18    from fastapi.responses import JSONResponse
19    from pydantic import BaseModel
20    import shutil
21    import pdfplumber
22    from langchain.text_splitter import CharacterTextSplitter
23    from langchain_community.vectorstores import FAISS
24    from sentence_transformers import SentenceTransformer
25    from langchain.embeddings.base import Embeddings
26    from contextlib import asynccontextmanager
27
28    # Configure logging
29    logging.basicConfig(level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s')
30    logger = logging.getLogger(__name__)
31
32    app = FastAPI(title="Legal Document Analysis API")
33
34    app.add_middleware(
35        CORSMiddleware,
36        allow_origins=["http://localhost:3000"], # Allow all origins for testing - restrict in production
37        allow_credentials=True,
38        allow_methods=["*"],
39        allow_headers=["*"],
40    )
41
42    # Constants
43    VECTOR_DB_DIR = "vector_db"
44    CHUNK_SIZE = 1000
45    CHUNK_OVERLAP = 200
46    MODEL_SIZE = os.environ.get("INSTRUCTOR_MODEL_SIZE", "base") # base, large, or xl
47    MODEL_NAME = f"hkunlp/instructor-{MODEL_SIZE}"
48
49    # Global variables
50    vector_store = None

```

**Fig - 5.3:** Python document analysis backend

## 5.3 Backend Development:

**5.3.1 Tech Stack:** Node.js and Express.js ensure scalability and data efficiency.

**5.3.2** A Python backend handles AI document processing with embedding, chunking, and semantic search using the instructor-base model from Hugging Face.

**5.3.3 Integrated Lang Chain with Gemini Pro API** for legal assistant chatbot and lawyer recommendations.

### 5.3.4 Core Functions:

- o **NLP Analysis:** Extracts essential information and generates summaries.

- o **Secure Authentication:** Email and phone verification ensure data privacy.

- o **AI-Driven Lawyer Matching:** Recommends legal professionals based on case type.

```

src > db > TS schemas > [x] messages
  1 import { pgTable, uuid, text, timestamp, varchar, serial, boolean, integer, numeric } from "drizzle-orm/pg-core";
  2 import { relations } from "drizzle-orm";
  3
  4 export const chats = pgTable("chats", {
  5   id: uuid("id").defaultRandom().primaryKey(),
  6   userId: varchar("user_id", { length: 256 }).notNull(),
  7   title: text("title").default("New Chat"),
  8   createdat: timestamp("created_at").defaultNow().notNull(),
  9   updatedAt: timestamp("updated_at").defaultNow().notNull(),
 10 });
 11
 12 export const messages = pgTable("messages", {
 13   id: uuid("id").defaultRandom().primaryKey(),
 14   chatId: uuid("chat_id")
 15   .references(() => chats.id)
 16   .notNull(),
 17   role: varchar("role", { length: 20 }).notNull(),
 18   content: text("content").notNull(),
 19   createdAt: timestamp("created_at").defaultNow().notNull(),
 20 });
 21
 22 export const chatRelations = relations(chats, ({ many }) => ({
 23   messages: many(messages),
 24 }));
 25
 26 export const messageRelations = relations(messages, ({ one }) => ({
 27   chat: one(chats, {
 28     fields: [messages.chatId],
 29     references: [chats.id],
 30   }),
 31 }));
 32
 33
 34 export const lawyers = pgTable("lawyers", {
 35   id: serial("id").primaryKey(),
 36   name: text("name").notNull(),
 37   avatar: text("avatar").default("/api/placeholder/150/150"),
 38   specialization: text("specialization").notNull(),
 39   experience: integer("experience").notNull(),
 40   location: text("location").notNull(),
 41   rating: numeric("rating", { precision: 2, scale: 1 }).notNull(),
 42   reviews: integer("reviews").notNull(),
 43   hourlyRate: text("hourly_rate").notNull(), // or use numeric if needed
 44   expertise: text("expertise").array().notNull(),
 45   availableNow: boolean("available_now").notNull(),
 46 });
 47
 48 // Updated schema to use Clerk authentication
 49 export const lawyersre = pgTable("lawyersre", {
 50   id: serial("id").primaryKey(),
 51   // Link to Clerk authentication
 52   clerkId: varchar("clerk_id", { length: 256 }).notNull().unique(),
 53   name: text("name").notNull(),
 54   avatar: text("avatar").default("/api/placeholder/150/150"),
 55   specialization: text("specialization").notNull(),
 56   experience: integer("experience").notNull(),
 57   location: text("location").notNull(),
 58   rating: numeric("rating", { precision: 2, scale: 1 }).notNull(),
 59   hourlyRate: text("hourly_rate").notNull(),
 60   expertise: text("expertise").array().notNull(),
 61   availableNow: boolean("available_now").notNull(),
 62   email: text("email").notNull().unique(),
 63   phone: text("phone"),
 64   bio: text("bio"),
 65   // Removed password field since authentication is handled by Clerk

```

**Fig – 5.4:** Schema

## 5.4 Database Management:

**5.4.1 Database:** PostgreSQL<sup>12</sup> with Prisma ORM for structured and secure storage.

**5.4.2 Neon DB** used for cloud deployment of the database.

### 5.4.3 Data Management:

- o Stores users assistant chat for future use, user profiles, and consultation history.

- o Maintains a verified lawyer database with reviews and ratings.

## 5.5 Testing and Deployment:

**5.5.1 Thorough Testing:** Rigorous checks on NLP accuracy, chatbot performance, and security.

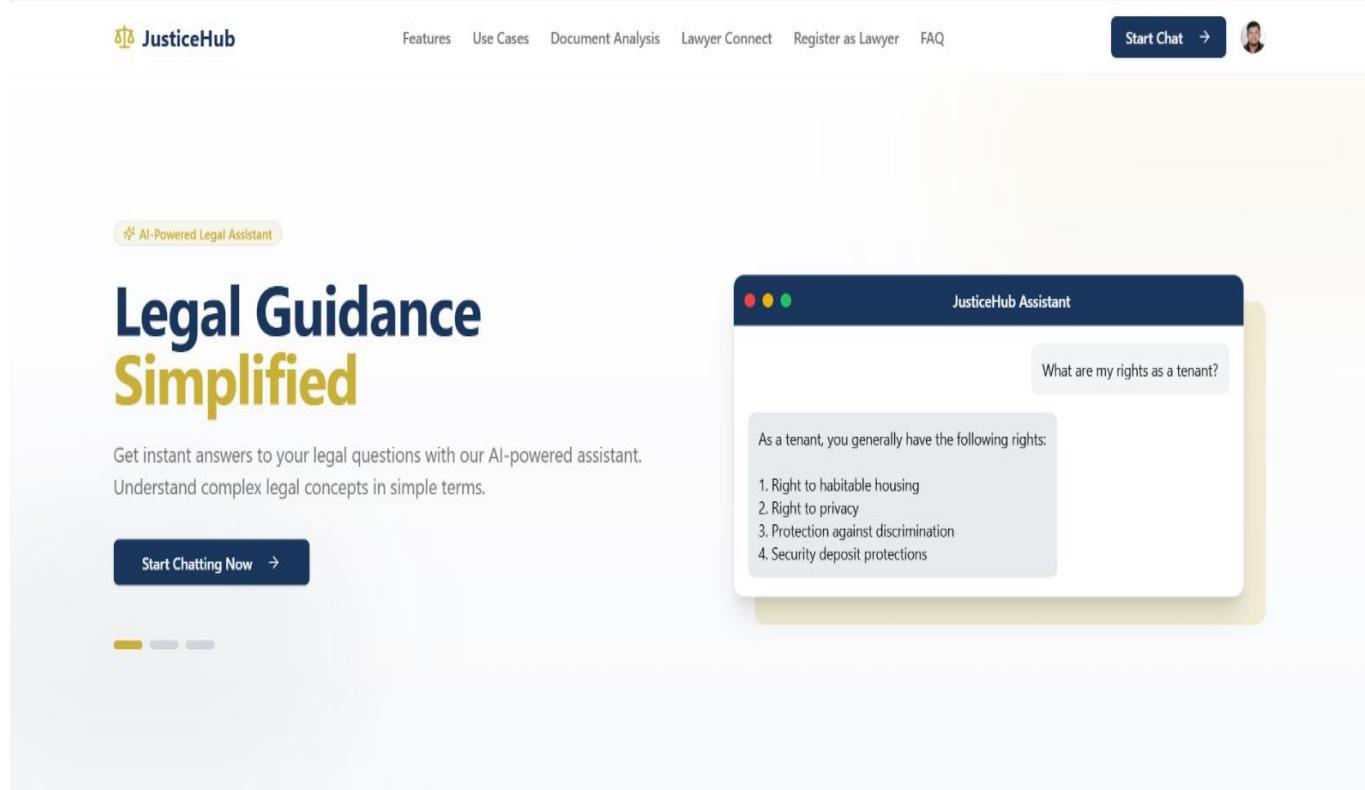
### 5.5.2 Reliable Deployment:

- o Frontend deployed on Vercel<sup>13</sup>, backend managed via GitHub, and AI services integrated through Hugging Face and Gemini APIs.

- o Ensures real-time performance, global availability, and data protection.

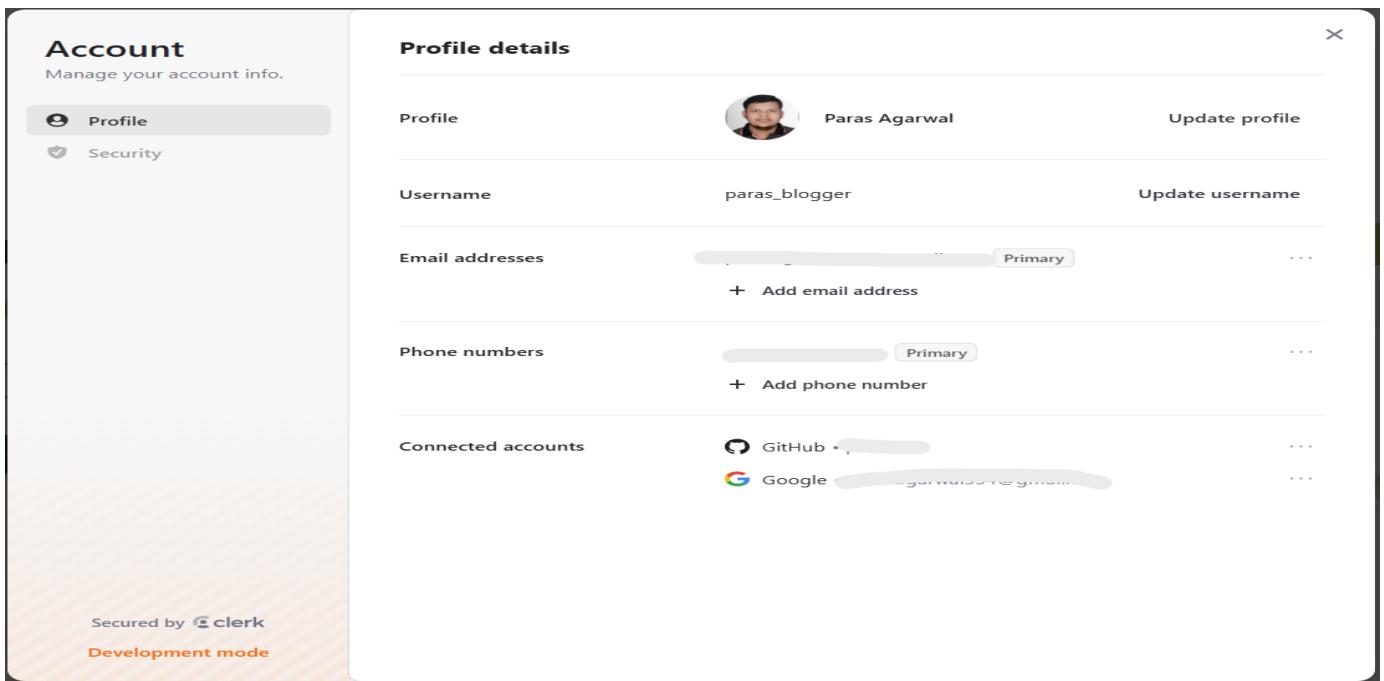
## CHAPTER 6: RESULTS AND SCREENSHOTS

**JusticeHub AI** revolutionizes access to legal assistance through a unified web platform that empowers users with instant, affordable, and intelligent legal support. Built using modern technologies like Next.js, TypeScript, Tailwind CSS, Clerk Authentication, PostgreSQL (via Drizzle ORM), Lang Chain, FAISS, and Google Gemini API, the application offers a multi-functional legal ecosystem. Key features include the **AI-powered Legal Assistant** for real-time Q&A and simplified law explanations, **Document Analysis** to extract, summarize, and detect key clauses from legal PDFs, and a robust **Lawyer Connect** module enabling authenticated users to discover, chat with, and consult registered legal professionals. JusticeHub AI bridges the gap between the public and the legal system by combining conversational AI, secure data handling, and professional connectivity, ultimately providing affordable justice at users' fingertips in a simplified and responsive interface.



**Fig – 6.1:** Website Homepage

**6.1** The Justice Hub homepage introduces an AI-powered legal assistant designed to simplify legal guidance for users. It features a clean, modern layout with a clear call to action—"Start Chatting Now"—encouraging users to engage with the assistant. The page highlights key features such as instant legal Q&A, easy-to-understand explanations, and user-friendly navigation. A sample chat window demonstrates how the AI responds to legal queries like tenant rights, making the platform's purpose immediately clear.



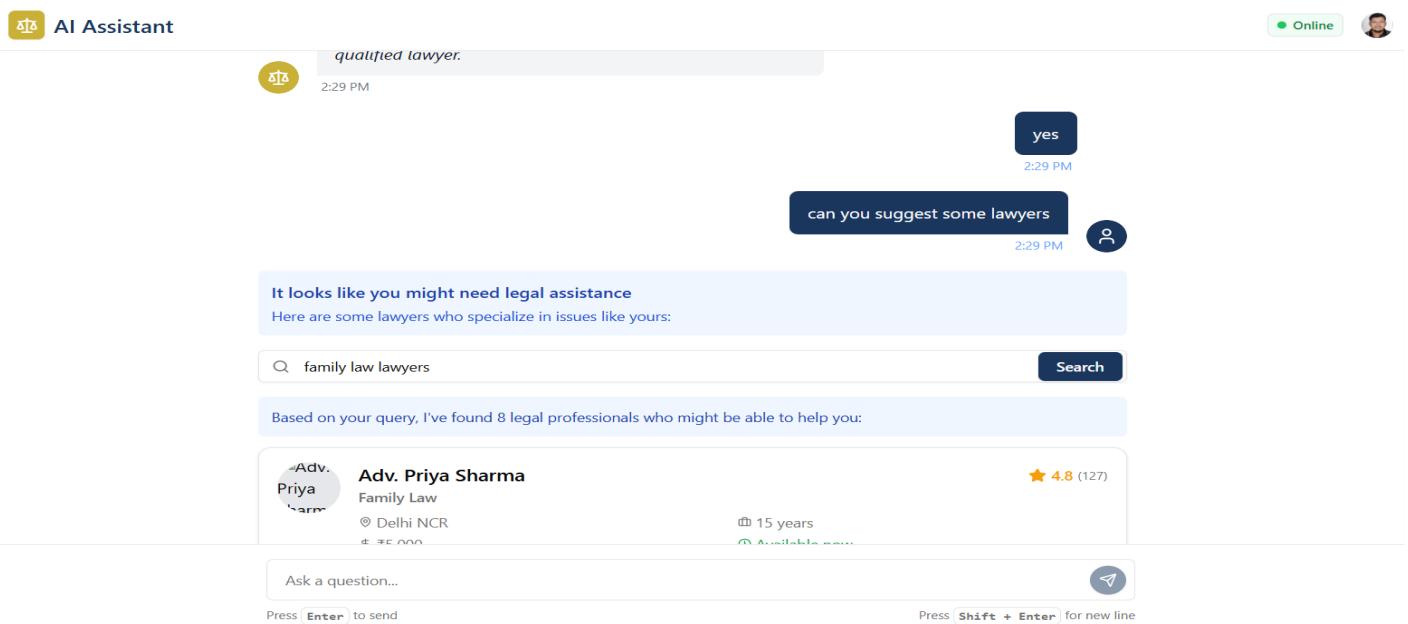
**Fig – 6.2:** Account Page

**6.2** Secure login interface featuring email and phone verification, ensuring robust user authentication and personalized account management.

The screenshot shows the 'AI Assistant' interface of JusticeHub. On the left, there's a sidebar with a 'JusticeHub' icon, a '+ New Chat' button, and a search bar ('Search chats...'). Below that is a 'RECENT CHATS' list with items like 'What are the divorce laws in ...', 'New Chat 05/01', 'search some lawyers on family ...', 'suggest me some lawyers 05/0', and 'what are my rights in case of ...'. At the bottom of the sidebar is a user profile for 'Paras Agarwal' (parasagarwal554@gmail.com). The main area has a 'Welcome to JusticeHub' message: 'Your AI-powered legal research and information companion for Indian laws. I'm here to help you with Indian legal questions, case laws, document drafting, and more. How can I assist you today?'. It also lists 'Try asking about these topics:' with three examples: 'What are the divorce laws in India?' (Hindu Marriage Act, Special Marriage Act, grounds for divorce), 'What are my rights in case of dowry harassment?' (Dowry Prohibition Act, IPC 498A, legal remedies), and 'How does property inheritance work in India?' (Hindu Succession Act, Muslim Inheritance laws, will execution). At the bottom is a large input field with 'Ask a question...' placeholder text, and instructions 'Press Enter to send' and 'Press Shift + Enter for new line'. There's also a 'Show desktop' button and a small user profile icon at the top right.

**Fig – 6.3:** Justice Hub assistant

**6.3** This interface allows users to ask legal questions about Indian laws, such as divorce, dowry, or inheritance, and receive instant, AI-powered legal information.



**Fig – 6.4:** Lawyer search using AI

**6.4** The assistant intelligently suggests relevant lawyers based on the user's legal issue, complete with location, experience, and availability.

The mobile responsive images show the JusticeHub website. On the left, there is a 'Legal Guidance Simplified' section with a 'Start Chatting Now' button. On the right, there is a 'Welcome to JusticeHub' section with a 'Try asking about these topics:' list, including 'What are the divorce laws in India?', 'What are my rights in case of dowry harassment?', and 'How does property inheritance work in India?'. Both sections include an 'Ask a question...' input field and a send button.

**Fig – 6.5:** Mobile responsive images

**6.5** The mobile responsiveness of the Justice Hub website offers a streamlined interface for users. It features compact filters for practice area, location, price range, and availability, along with scrollable lawyer profiles

displaying key details like name, experience, hourly rate, expertise, and rating, with accessible options to chat.

The screenshot shows a two-step registration process for lawyers. Step 1: Account Information. It includes fields for Full Name (Paras Agarwal), Profile Picture (Upload), Email Address (parasagarwal554@gmail.com), and Phone Number (04454674657). Step 2: Professional Information. It includes Primary Specialization (Family Law), Years of Experience (14), Location (Mohali), Hourly Rate (\$ 1500), and Education (Institution: Punjab university, Degree: LLB, Year: 2010). Navigation buttons 'Next' and 'Previous' are at the bottom of each step.

**Fig – 6.6:** Lawyer registration Page

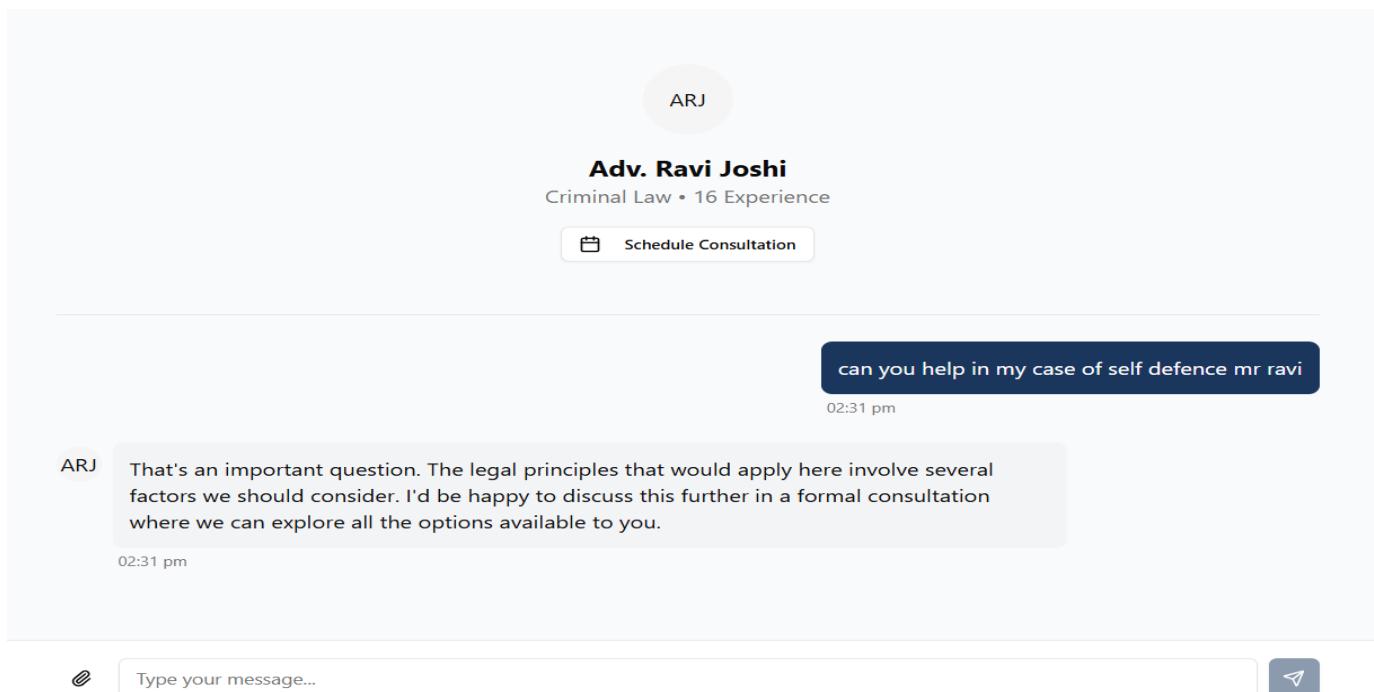
**6.6** This image displays the lawyer registration interface where legal professionals can create their profiles. The form collects essential details to ensure verified and structured onboarding into the system.

The screenshot shows the "Lawyer Connect" page on the JusticeHub platform. It features a search bar and filters for Practice Area (Criminal Law), Location (All Locations), Price Range (Hourly) (₹0 to ₹10000), Minimum Experience (Any Experience), and Availability (Available Now). The search results show 4 lawyers found, with the first result being "Adv. Ravi Joshi" from Ahmedabad, with 16 years of experience, ₹5,400 per hour, and expertise in Murder Trials, Narcotics, and White Collar Crime. Buttons for "Chat Now" and "View Profile" are available for each result.

**Fig – 6.7:** Lawyer-connect Page

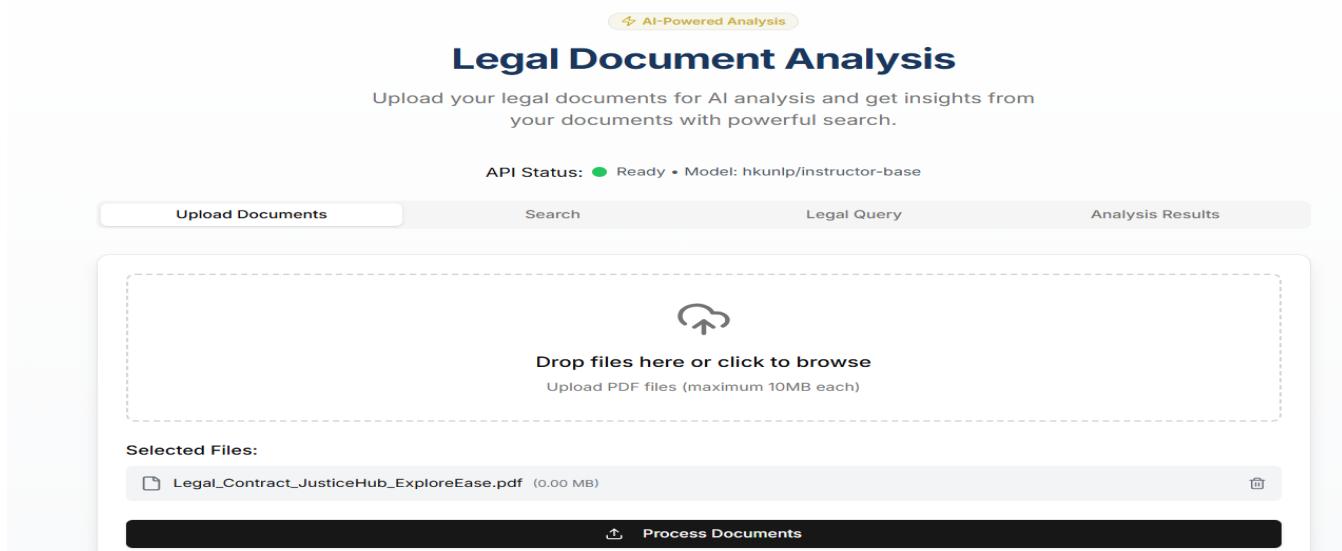
**6.7** The image shows the "Lawyer Connect" page on the Justice Hub platform, where users can search and connect with legal professionals. It includes filters for practice area, location, price range, and

availability. The page displays lawyer profiles with details such as name, location, years of experience, hourly rate, rating, and areas of expertise, along with options to chat or view the full profile.

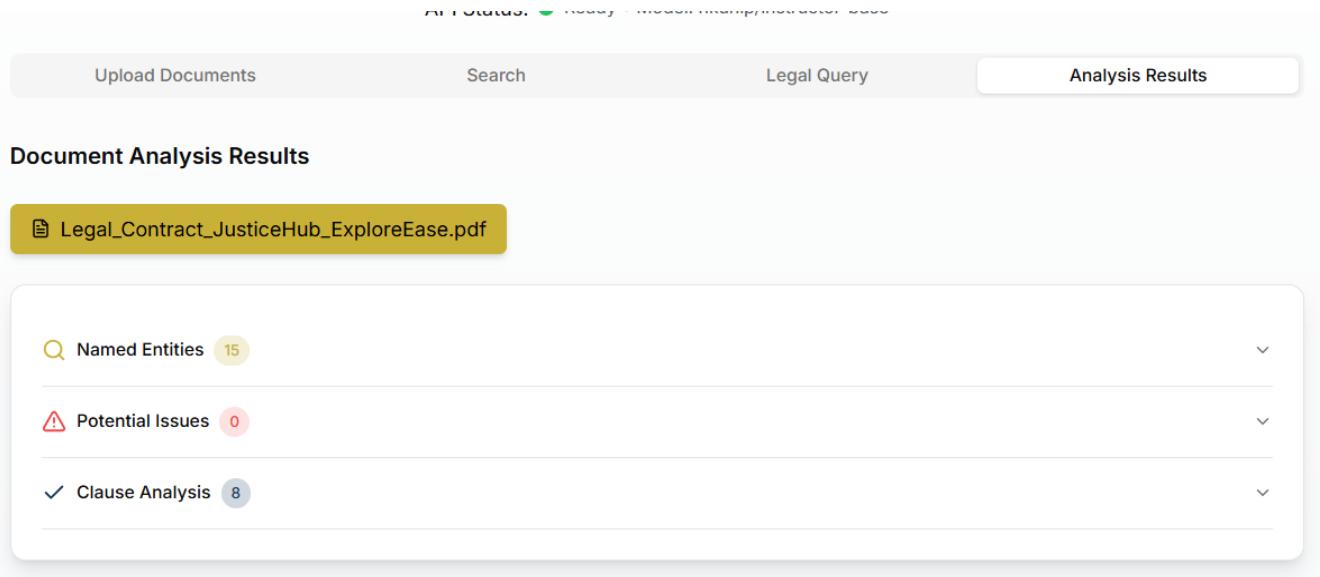


**Fig – 6.8:** Chat with lawyer Page

**6.8** This is the **Lawyer Chat Interface**, where users can interact with a listed legal expert—in this case, *Adv. Ravi Joshi*, a criminal law specialist with 16 years of experience. The interface allows the user to ask legal questions and receive initial guidance, as well as schedule a formal consultation through the "Schedule Consultation" button. The chat is designed to provide a quick, conversational way to seek legal help.



**Fig – 6.9:** Document upload Page



**Fig – 6.10:** Processed document result

**6.9** This is the **Document Upload and Processing** page of the legal analysis platform. Users can upload legal documents (PDF format, max 10MB) to perform AI-powered analysis. The interface includes drag-and-drop functionality for ease of use and an "Upload & Process" button to initiate document parsing. Once uploaded, the document is listed below with an option to remove it before processing.

## Legal Document Analysis

Upload your legal documents for AI analysis and get insights from your documents with powerful search.

API Status: ● Ready • Model: hkunlp/instructor-base

Upload Documents      Search      Legal Query      Analysis Results

### Search Documents

Preset Questions

What are the main legal rights mentioned?   Summarize the key points of this document   Find information about liabilities and obligations  
 Extract any deadlines or important dates   What are the termination clauses?   Find information about payment terms

Enter search terms or select a preset question...

**Fig – 6.11:** Search and Analyse Page

**6.10** This screenshot shows the query interface where users can upload legal documents and input specific questions. The system processes the uploaded content and generates relevant, context-aware responses using AI-based analysis.

**Search Results**  
Showing 3 most relevant passages from your documents

**Passage 1** Relevance: 90%

3. Compensation  
Client shall pay Provider USD 100,000 in accordance with the payment schedule set forth in Exhibit B.

4. Confidentiality  
Each Party agrees to keep confidential all proprietary information disclosed by the other Party for a period of three (3) years after termination.

5. Intellectual Property  
All intellectual property developed under this Agreement shall be the exclusive property of Client, subject to Provider's license to use for development purposes.

6. Warranties  
Provider warrants that the services will be performed in a professional manner and conform to industry standards for a period of ninety (90) days after delivery.

7. Termination  
Either Party may terminate this Agreement upon thirty (30) days' written notice if the other Party materially breaches any obligation and fails to cure within such notice period.

8. Governing Law  
This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, USA.

9. Dispute Resolution

**Passage 2** Relevance: 89%

8. Governing Law  
This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, USA.

9. Dispute Resolution  
Any disputes arising out of or relating to this Agreement shall be resolved by binding arbitration in Wilmington, Delaware, under

**Fig – 6.12:** Result from document analysis

**6.11** This image represents the output of the document analysis process. Based on the uploaded document and the user's query, the system displays a structured response, highlighting key insights extracted from the legal text.

Upload Documents    Search    Legal Query    Analysis Results

**Legal Query Results**

**Original Query**

What are the main legal rights mentioned?

**Relevant Context**

**Context #1:**  
the JusticeHub AI Team regarding their roles, responsibilities, and collaboration in managing the JusticeHub AI App. 2. Ownership: ExploreEase shall retain full ownership rights of the JusticeHub AI App, including its codebase, intellectual property, and branding. 3. Management Rights: The JusticeHub AI Team shall be granted the right to manage the development, operations, and technical maintenance of the app as per the directions and strategic objectives laid down by ExploreEase. 4. Term: This Agreement shall be effective from 20 March 2025 and shall remain in force until 20 April 2025 unless extended by mutual consent in writing. 5. Legal Compliance: Both parties agree to comply with the relevant laws applicable under the Information Technology Act, 2000, Indian Contract Act, 1872, and other applicable regulations and guidelines in force in India. 6. Confidentiality: Both parties shall maintain the confidentiality of the data, source code, and communications

**Context #2:**  
India. 6. Confidentiality: Both parties shall maintain the confidentiality of the data, source code, and communications exchanged during the term of this agreement. 7. Dispute Resolution: Any disputes arising out of or in connection with this Agreement shall be resolved amicably, failing which the dispute shall be referred to arbitration under the Arbitration and Conciliation Act, 1996, seated in [City]. 8. Governing Law: This Agreement shall be governed by and construed in accordance with the laws of India. IN WITNESS WHEREOF, the parties hereto have executed this Legal Contract Agreement as of the day and year first above written. Signed for and on behalf of ExploreEase Pvt. Limited: \_\_\_\_\_ Date: 20 March 2025 Signed for and on behalf of JusticeHub AI Team: \_\_\_\_\_ Date: 20 March 2025

**Context #3:**  
LEGAL CONTRACT AGREEMENT This Legal Contract Agreement ("Agreement") is made and entered into on this 20th day of March 2025, by and between: 1. ExploreEase Pvt. Limited, a private limited company incorporated under the Companies Act, 2013, having its registered office at [Registered Address], hereinafter referred to as "ExploreEase". 2. JusticeHub AI Team, an independent project and legal technology group, hereinafter referred to as "JusticeHub AI Team". WHEREAS, ExploreEase is the official owner and leader of the JusticeHub AI App; AND WHEREAS, the JusticeHub AI Team is engaged in the development, management, and strategic implementation of the JusticeHub AI App. NOW,

**Submit Legal Query**

Preset Questions

What are the main legal rights mentioned?    Summarize the key points of this document    Find information about liabilities and obligations

Extract any deadlines or important dates    What are the termination clauses?    Find information about payment terms

Legal Question

What are the main legal rights mentioned?

Context Size (3)

Number of document chunks to use for context (higher provides more context but may be slower)

Submit Query

**Fig – 6.13:** Legal Query submit Page

**6.12** The Legal Document Analysis module in JusticeHub AI enables users to query uploaded agreements and receive precise, context-aware insights. In this case, the AI extracted key legal rights such as ownership, confidentiality, compliance obligations, and dispute resolution from the agreement, showcasing its ability to interpret legal language efficiently

## **CHAPTER 7: CONCLUSION AND FUTURE SCOPE**

### **7.1 Conclusion**

The JusticeHub AI platform successfully demonstrates how artificial intelligence can be harnessed to revolutionize the legal industry by providing instant legal insights, intelligent document analysis, efficient case law research, and real-time legal assistance. By integrating NLP, the system simplifies complex legal processes and enhances accessibility, affordability, and efficiency for both individuals and businesses. The platform bridges the gap between users and legal professionals, offering a secure and intuitive interface that streamlines legal interactions in a digital-first world.

### **7.2 Future Scope**

#### **7.2.1 Multilingual Support Expansion.**

- Adding support for more regional and international languages to make legal guidance accessible to a broader audience.

#### **7.2.2 Voice-Enabled Legal Assistant:**

- Integrating voice input/output for hands-free legal assistance and improved accessibility.

#### **7.2.3 Predictive Legal Analytics:**

- Enhancing AI models to predict legal outcomes and recommend legal strategies based on historical data.

#### **7.2.4 Integration with Government Portals:**

- Connecting with legal databases and e-court services for real-time legal updates and case tracking.

#### **7.2.5 Store Documents Safely:**

- Allow users and lawyers to safely upload, organize, and retrieve legal documents in encrypted, cloud-based storage with role-based access controls.

## REFERENCES

- Surden, H., *Artificial Intelligence and Law: An Overview*, 35 Ga. St. U. L. Rev. 1305 (2019).  
[scholar.law.colorado.edu](http://scholar.law.colorado.edu)
- Surden, H., *ChatGPT, Large Language Models, and Law*, 92 Fordham L. Rev. 1941 (2024). [Flash Archive](#)
- Jeyadev, *LegalAI — Document Analysis and Predictive Case Outcomes*, Medium (2024). [Medium](#)
- LawGeex AI Whitepaper, *Comparing AI vs. Human Contract Review*, LawGeex (2021).  
[images.law.com](http://images.law.com)
- Thomson Reuters, *Use of Artificial Intelligence in Legal Practice* (2023). [biicl.org](#)
- Monahan et al., *Lawyering in the Age of AI*, Minn. L. Rev. (2024). [Minnesota Law Review -](#)
- Rocket Lawyer, *Rocket Lawyer AI™ to Accelerate Legal Access* (2023). [Rocket Lawyer](#)
- Gartner, *AI in the Legal Industry* (2025). [Gartner](#)
- European Parliamentary Research Service, *GDPR's Impact on AI* (2020). [europarl.europa.eu](#)
- Gray et al., *Dark Patterns Post-GDPR: Consent Interfaces*, CHI Conf. (2019). [UCL Discovery](#)
- Klymenko et al., *Technical Measures for Data Privacy Compliance*, arXiv (2022). [arXiv](#)
- Clerk Authentication <https://clerk.com/docs/quickstarts/setup-clerk>
- Node.js for Backend Development <https://nodejs.org/en/docs/>
- Vercel <https://vercel.com/docs>
- UI/UX Design Tailwind CSS for Modern Web Styling <https://v2.tailwindcss.com/docs>

## APPENDIX A: PROJECT TIMELINE (GANTT CHART)

- The table below outlines the timeline for JusticeHub AI development.

Phase	Week 1–2	Week 3–4	Week 5–6	Week 7–8	Week 9–10
Requirement Analysis	✓				
UI Design & Planning	✓	✓			
Frontend Development		✓	✓		
Backend & AI Integration		✓	✓	✓	
Testing & Optimization			✓	✓	✓
Final Deployment				✓	✓
Documentation & Review					✓