

# MOHAMMED IKRAM ASHRAFI

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🌐 Portfolio: [www.mohammed-ikram-ashrafi.in](http://www.mohammed-ikram-ashrafi.in)

📄 GitHub: <https://github.com/miashraf1818>.

📍 Karnataka, India

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## PYTHON DEVELOPER | FULL-STACK & GENAI INTEGRATION DEVELOPER

Python Full-Stack & GenAI Developer with hands-on experience in building and deploying AI-powered, production-ready applications using FastAPI, Django, and React. Strong expertise in Retrieval-Augmented Generation (RAG) using LangChain, Pinecone, and LLaMA-3 via Groq API. Experienced in cloud deployment on AWS, Docker containerization, secure authentication with JWT & Google OAuth, and real-world production debugging (CORS, 502, DB pooling). Proven ability to design scalable backend systems and deliver reliable end-to-end solutions.

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### STRENGTHS AND EXPERTISE

Full-Stack Development | Python Backend Development | AI/ML Integration

Role-Based Authentication | RESTful API Design | Database Optimization

Django & FastAPI | React | Cloud Deployment & DevOps

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### PROJECTS WORKED

#### GenAI RAG Chatbot Project

November 2025 - Ongoing

##### Full-Stack Developer

Developed an enterprise-level RAG-based AI chatbot for intelligent document understanding and conversation using the LLaMA-3 70B model integrated through Groq API and orchestrated with LangChain

##### Accomplishments:

- Developed a complete FastAPI backend with RESTful architecture and dual authentication (JWT + Google OAuth 2.0) for secure and seamless user access.
- Implemented a role-based access control (RBAC) system with User and Admin roles, enabling granular permissions and secure admin dashboard management.
- Built an end-to-end Retrieval-Augmented Generation (RAG) pipeline supporting PDF, DOCX, TXT, and Markdown documents with automated text extraction and intelligent chunking.
- Integrated Pinecone vector database with HuggingFace embeddings to enable high-accuracy semantic search with sub-200ms average response time and ~95% retrieval accuracy.
- Designed a full user management system including SMTP email verification, bcrypt password hashing, profile handling, and persistent chat history storage.
- Deployed a production-ready full-stack application using Docker containerization, PostgreSQL database, async file upload processing, and cloud infrastructure on AWS EC2 / Render.
- Resolved real-world production issues including OAuth redirect mismatches, CORS errors, 502 gateway issues, API URL misconfiguration, and database connection pooling.
- Implemented secure admin CLI utilities for controlled user role promotion and system monitoring.

##### Tech Stack:

Python 3.11, FastAPI, LangChain, Pinecone, LLaMA-3 (Groq), React, Next.js, TypeScript, PostgreSQL, JWT, Google OAuth, HuggingFace, Docker, AWS EC2, Render, Git

#### Anti-Ragging Complaint Management System

Dec 2024 - Mar 2025

##### Full-Stack Developer

Developed comprehensive complaint management system using Django backend and React frontend with sophisticated multi-role authentication and deployment to production.

##### Accomplishments:

- Implemented 4 distinct user roles (Admin, Principal, Squad Members, Students) with granular permissions and custom middleware for access control
- Built complete authentication system with JWT token-based authentication and Google OAuth integration for secure user management
- Designed PostgreSQL database schema with migrations and developed comprehensive APIs using Django REST Framework
- Implemented email notification system, file upload functionality, and real-time updates for complaint tracking workflow
- Created responsive UI using React, Tailwind CSS, and Bootstrap ensuring mobile-first design accessible across all devices
- Deployed production application on Render and resolved critical backend issues including CORS, 502 errors, OAuth configuration, and database connection pooling
- Tech Stack: Python, Django, Django REST Framework, React, PostgreSQL, JWT, Google OAuth, Tailwind CSS, Bootstrap, Render, Postman, Git

**Backend/Full-Stack Developer**

Built full-stack AI chatbot with Django REST backend and React frontend integrating Google Gemini API for intelligent conversational responses.

**Accomplishments:**

- Integrated Google Gemini API for intelligent response generation enabling natural language conversations
- Implemented JWT authentication and Google OAuth login for secure user access and session management
- Designed PostgreSQL database for persistent chat history storage and conversation retrieval
- Developed admin dashboard with conversation analytics for monitoring chatbot performance and user engagement
- Deployed production application on Render with complete DevOps configuration and monitoring
- Tech Stack: Python, Django, Django REST Framework, React, PostgreSQL, Google Gemini API, JWT, Google OAuth, Render

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**EDUCATION****Diploma in Computer Science**

D. Banumaiah's Polytechnic College | Completed in 2025

**Bachelor of Computer Applications (BCA)**

University of Mysore (Online Program ) | Expected Graduation: 2028

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**SKILLS SUMMARY**

**Programming & Frameworks:** Python, JavaScript, Django, FastAPI, Flask, React, Django REST Framework, SQLAlchemy ORM, Async/Await Programming

**AI/ML Technologies:** LangChain, Large Language Models (Llama 3.3, Google Gemini), RAG Architecture, Pinecone Vector Database, HuggingFace Transformers, Semantic Search, Groq API, Vector Embeddings, Document Processing (PDF/DOCX/TXT/MD), Text Chunking

**Frontend Development:** React, HTML5, CSS3, Tailwind CSS, Bootstrap, Responsive Design

**Database Management:** PostgreSQL, MySQL, SQLite, Pinecone (Vector DB), Database Design, Migrations, Optimization, Connection Pooling, Query Optimization

**Authentication & Security:** JWT (JSON Web Tokens), OAuth 2.0 (Google OAuth), Password Hashing (bcrypt), Role-Based Access Control (RBAC), Custom Middleware, Session Management

**API Development:** RESTful API Design, Django REST Framework, FastAPI, Third-Party API Integration (Google OAuth, Google Gemini, WhatsApp), Async API Development

**DevOps & Deployment:** Docker, Render, AWS EC2, Vercel, CI/CD, CORS Configuration, Database Connection Pooling, Production Debugging, 502 Error Resolution, Environment Configuration Management

**Development Tools:** Git, GitHub, Postman, VS Code, PyCharm, Version Control, Agile Project Management

**Additional Skills:** Email Systems (SMTP), File Upload Management, Real-Time Updates, Performance Optimization, Debugging, Complete Development Lifecycle Management, Production Issue Resolution, System Monitoring

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**ACCOMPLISHMENTS**

- Built and deployed 3+ production-ready full-stack applications using Django/FastAPI with React, handling backend APIs, frontend integration, and cloud deployment.
- Successfully transitioned from Java/Spring Boot to Python/Django in a short time, delivering real projects and demonstrating strong adaptability and fast learning.
- Designed and implemented multi-role authentication systems with up to four role levels (admin, doctor, patient, etc.), including secure access control and session management.
- Developed GenAI-powered features, including an LLM-based RAG chatbot that uses vector search and embeddings to answer domain-specific questions from custom data.
- Configured and debugged complex OAuth and Google integration flows, resolving issues like invalid clients, redirect mismatches, and calendar/auth configuration.
- Implemented calendar integration via iCalendar (.ics), enabling automatic calendar invites that work across Google, Outlook, and Apple calendars without relying on a single provider.
- Resolved critical production issues such as CORS errors, HTTP 502s, OAuth misconfiguration, and database connection pooling, restoring stability under real user traffic.
- Gained hands-on cybersecurity experience using Linux and Kali Linux, applying security best practices (password hashing, CSRF protection, role-based access) in web applications