

# K MUSADIQ PASHA

+91 6366694774 ◊ Bangalore, India ◊ kmusadiqpasha@gmail.com ◊ Portfolio

[linkedin.com/in/kmusadiqpasha](https://www.linkedin.com/in/kmusadiqpasha) ◊ [github.com/MusadiqPasha](https://github.com/MusadiqPasha) ◊ [leetcode.com/u/kmusadiqpasha](https://leetcode.com/u/kmusadiqpasha)

## EDUCATION

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**Bachelor of Technology in Computer Science and Engineering (AIML)**, PES University 2022 - 2026

Relevant Coursework: Design and Analysis of Algorithms, Big Data, Social Computing, Advanced Data Analytics, NLP,

Deep Learning on Graphs

CGPA: 8.12

## EXPERIENCE

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**Research Intern, CDSAML – PES University**

Jan 2026 – Present

- Built an end-to-end legal judgment prediction system using RAG and fine-tuned LLaMA 3.1, processing 700+ cases.
- Achieved BERTScore F1 of 0.85 on held-out data by optimizing the retrieval and generation pipeline.

## TECHNICAL SKILLS

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**Programming Languages:** Python (Proficient), C++ (Basic), Java (Basic), SQL (Intermediate)

**Core CS:** Data Structures & Algorithms, OOP, Operating Systems, DBMS, Computer Networks

**Web & Systems:** REST APIs, HTTP, Client-Server Architecture, Auth (JWT, Sessions)

**Backend Development:** Node.js, Express, Microservices

**Tools:** Git/GitHub, Docker (Basic)

**Machine Learning:** TensorFlow, PyTorch, Pandas, NumPy

## PROJECTS

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**Spotify DBMS Full-Stack Application** [GitHub](#)

**Technologies:** MySQL, Node.js

- Designed relational schema, optimized SQL queries and indexing for fast catalog retrieval.
- Built RESTful APIs for authentication & search, handling client-server communication and database queries efficiently.

**Calendar Microservice** [GitHub](#)

**Technologies:** Node.js, Express, MongoDB, Docker

- Built a collaborative calendar microservice for teams to create, update, and share events with real time synchronization.
- Designed RESTful APIs for event CRUD, integrated MongoDB, containerized with Docker and deployed locally.

**Automated Chess Bot for Chess.com** [GitHub](#)

**Technologies:** Python, Stockfish, PyAutoGUI, OpenCV

- Built an automated chess playing bot with real time board state parsing, integrating computer vision & decision logic.
- Attained 95% move accuracy across rapid, blitz, and bullet formats on Chess.com.

**SnapIT Web Application** [GitHub](#)

**Technologies:** Node.js, MongoDB

- Developed an image-sharing app with live webcam integration and responsive front-end UI.
- Designed intuitive user interface with MongoDB backend for efficient storage and retrieval of user data.

**Knowledge Graph-Enhanced RAG for Crime Film Analysis** [GitHub](#)

**Technologies:** Neo4j, RAG, LLaMA 3.1, LangChain, Python

- Developed a KG-integrated RAG system enabling contextual reasoning over unstructured crime film narratives.
- Combined semantic graph embeddings with LLM retrieval to generate interpretable, explainable insights.

## SELECT PUBLICATIONS

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[1] **Beyond Loyalty & Betrayal: A Knowledge Graph-Enhanced RAG System for Crime Film Insights & Analysis**, *ICTIS 2025 (Springer LNNS)* [\[Paper\]](#)

[2] **Comparative Analysis of Traffic Accident Detection with Explainability of DL Models**, *IJAECs 2024* [\[Paper\]](#)

## CERTIFICATIONS & ACHIEVEMENTS

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- Programming: Solved 1250+ problems on [LeetCode](#) with a 1900+ contest rating (Knight, Top 3.7%)
- Certifications: Stanford ML (Coursera), Kaggle ML, PESU IO ML (Distinction), Udemy Python Bootcamp
- Strong communication, organization, and team coordination skills demonstrated across multi-member technical projects.