Abhishek Kumar

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Summary

High-performance engineering student ranking in the Top 7% globally in competitive programming (Meta Hacker Cup). Proficient in architecting scalable backend systems and deploying Retrieval-Augmented Generation (RAG) pipelines using Docker and AWS. Experienced in optimizing database query latency by 30% and bridging hardware-software domains through IoT-driven ML applications.

Technical Skills

- **Languages:** C++, Python, JavaScript (ES6+), SQL, HTML/CSS
- **Frameworks & Libraries:** Node.js, Express.js, FastAPI, React.js, LangChain, PyTorch
- **Cloud & DevOps:** Docker, MongoDB Atlas, Git
- **AI & Data:** OpenAI Embeddings, FAISS, RAG, Vector Databases, BM25, RESTful APIs, WebRTC
- **Database:** MongoDB, PostgreSQL.

Professional Experience

Skoollage **Remote**
EdTech Engineering Intern *May 2025 – July 2025*

- Supported development of interactive, skill-based learning modules using React.js and Node.js.
- Worked on backend RESTful APIs and basic database operations for student, course, and mentorship management.
- Assisted in implementing a Retrieval-Augmented Generation (RAG) based content retrieval system to reduce response latency and improve answer relevance.
- Collaborated with cross-functional teams to align technical features with student learning outcomes and platform goals.

Key Projects

LegalAid (AI Information Retrieval System) *Python, FastAPI, RAG, OpenAI, FAISS*

- Developed a Retrieval-Augmented Generation (RAG) system to extract legal insights from unstructured documents, reducing hallucinations.
- Engineered a hybrid retrieval pipeline combining FAISS (vector search) and BM25 (keyword search) to maximize context relevance.
- Deployed the inference engine using FastAPI and Docker, ensuring consistent performance across development and production environments.

MediVerse (Backend Services Platform) *Node.js, MongoDB Atlas, Docker, AWS*

- Architected a robust backend for a multi-user health application, handling 50-100 concurrent users with 99.9% uptime.
- Optimized API flows and reduced redundant MongoDB queries, achieving a 30% reduction in average response latency under load.
- Implemented secure RESTful APIs with Role-Based Access Control (RBAC) and deployed services using Docker containers on cloud infrastructure.

SafeSchool (IoT AI Wearable) *ESP32, Machine Learning, Cloud Backend*

- Designed an intelligent wearable device using ESP32 to monitor student physiological metrics (PPG, GSR) in real-time.
- Integrated a cloud-based Machine Learning model to detect stress patterns, demonstrating end-to-end proficiency from hardware sensors to software analysis.
- Processed edge data streams to trigger timely safety alerts, validating the system's reliability in simulated high-stress scenarios.

Education

Indian Institute of Information Technology, Guwahati **Assam, India**
B.Tech in Electronics and Communication Engineering (ECE) *2022 – 2026 (Expected)*

Honors & Achievements

- **Meta Hacker Cup 2025:** Qualified for Round 2 with **Global rank 1864**, ranking in the **Top 7%** of 30,000+ global participants.
- **TCS CodeVita:** Achieved **Global Rank 1180** among thousands of competitive programmers.
- **ThinkQbator Innovation Mela 2025:** Secured a position among the **Top 10 teams** for innovative product design.
- **Tata Imagination Challenge 2024:** Selected as a Semi-Finalist for problem-solving aptitude.