

Atharv Sandeep Patil

📍 Los Angeles, CA 📞 +91 8160037448 ✉ atharvsa@usc.edu 🔗 LinkedIn 🐙 Github 📁 Portfolio

EDUCATION

University of Southern California, Los Angeles, CA

Aug 2026 – May 2028 (Expected)

Master of Science in Computer Science

Sardar Vallabhbhai National Institute of Technology, Surat, India

Aug 2020 – Jan 2024

Bachelor of Technology (Computer Science & Engineering)

CGPA: 8.75/10 (First Class with Distinction)

TECHNICAL SKILLS

- **Programming:** Java, Python, JavaScript, SQL
- **Backend & Frontend:** Spring Boot, NodeJS, Microservices, Multithreading, ReactJS
- **Cloud & DevOps:** AWS (Lambda, S3, ECS, OpenSearch), Docker, Google ADK, Spinnaker
- **Databases:** Oracle DB, MongoDB, Neo4j
- **AI Engineering:** LLM, RAG Pipelines, Prompt Engineering, Agent Development

PROFESSIONAL EXPERIENCE

Software Development Engineer II, J.P. Morgan Chase & Co.

Jan 2026 – Jun 2026 | Mumbai, India

- Extended a **RAG-based** system with a client-in-context feature across **5 specialized sub-agents**, enabling **~200 financial advisors** to ask client-specific questions with real-time data retrieval and improving response relevance.
- Led **LLM** model migration including **prompt re-engineering** and output validation, improving agent response accuracy from **90% to 95%** measured via a regression evaluation suite.
- Spearheaded migration of the system from ChromaDB to **AWS OpenSearch** and from a Python-based RAG implementation to an agentic framework built on **Google ADK**, modernizing the architecture for improved scalability and maintainability.

Software Development Engineer I, J.P. Morgan Chase & Co.

Jan 2024 – Jan 2026 | Mumbai, India

- Re-architected an offset calculator (**Spring Boot + AWS Lambda + multithreading**) to process **~600K records**, reducing runtime from ~2 hrs to ~8 min (**96% faster**) and automating report delivery via a React dashboard.
- Diagnosed and resolved **LLM hallucination** and **retrieval issues** in the RAG system serving ~200 private banking advisors, improving response reliability.
- Integrated **5** legacy mainframe tables (**~15 years** of historical data) into AWS Lambda **ETL** pipelines, modernizing the data architecture to a data mesh framework and supporting mainframe decommissioning.
- Migrated the RAG service from **AWS EKS to AWS ECS**, reducing infrastructure costs by **~30%**.
- Engineered enhancements to **Spring Boot microservices** for investment account management, enabling new product launches for **~500K** private banking clients.

Software Engineer Program Intern, J.P. Morgan Chase & Co.

May 2023 – Jul 2023 | Mumbai, India

- Optimized a **parser** translating internal query language into SQL using **Spring Boot**, extending support for **Databricks SQL** dialect and eliminating compatibility errors.
- Constructed a nested data retrieval method in Databricks using Apache Calcite, reducing database roundtrips from **3 to 1**.

RESEARCH EXPERIENCE

Undergraduate Researcher, Sardar Vallabhbhai National Institute of Technology

Jul 2023 – Dec 2023 | Surat, India

- Designed and fine-tuned an intent detection module using **Wit.ai** to classify legal queries, enabling accurate **Cypher query generation** and intent-based retrieval of **9,377 Supreme Court cases** from a **Neo4j**-based legal property graph.
- Evaluated NLU-based approach against **BERT** and **BiLSTM** baselines, achieving a significant improvement in intent detection (**F1 Score: 0.89**) while maintaining competitive entity extraction accuracy.
- **Publication:** Procedia Computer Science, presented at **ICMLDE 2025**. 

PROJECTS

Healthcare Platform , Code For Good - JPMC Hackathon

2022

- Delivered a full-stack platform used by **~200 healthcare workers** to remotely track and counsel mothers in rural India, with smart logic to aid workers in selecting suitable medicines and vaccines.
- Collaborated on backend development employing **NodeJS, Express, MongoDB, and Firebase** authentication, ensuring smooth functionality and data protection.

Voyageur (Travel Website) , Microsoft Learn Student Ambassador

2022

- Architected a full-stack travel website using the **MERN stack**, collaborating within a team to deliver robust and scalable functionality.
- Built a custom Hotels API via web scraping, enabling streamlined hotel search and booking across **20+** Indian cities.

CERTIFICATIONS & LEADERSHIP

- Amazon AWS Certified Developer – Associate (April 2026)
- Web Development Lead - Google Developer Student Clubs, NIT Surat (2022-23)
- Logistics Lead - Hack The Tank, 24-hour Pan-India Hackathon ft. Shark Tank India entrepreneurs (100+ participants)
- Video Editor Lead - Renesa, Media and Publication House, NIT Surat (2022-23)