

# Sachin Rathod

Boulder, CO | 720-352-0481 | [sara6215@colorado.edu](mailto:sara6215@colorado.edu) | [LinkedIn](#) | [Github](#) | [Leetcode](#) | [Portfolio](#)

## TECHNICAL SKILLS

**Languages:** C++, C#, Java, Python, TypeScript, Node.js

**Frameworks:** Spring Boot, Flask, React, Angular, Polars, Pandas, Hadoop, PySpark

**Tools:** GCP, AWS, Docker, Kubernetes, Jenkins, Redis, MinIO, Firebase, MongoDB, DynamoDB, MySQL, Kafka, RabbitMQ, ZeroMQ, Plotly

**Certifications:** [AWS Cloud Practitioner](#), [AWS Cloud Essentials](#), [Spring Boot](#), [JUnit](#)

## EXPERIENCE

### Esri – Geodatabase Team

May 2024 - August 2024

Software Development Engineer Intern | C#, Python

Redlands, CA, USA

- Developed a tool using **C#** to fuzz test the **ArcGIS Enterprise server** for performance and correctness of **Utility Network**.
- Architected the tool with async tasks and the multithreaded programming paradigm to generate **10-100 billion requests**, which could trigger code execution across various domains of the business logic that unit tests fail to trigger.
- Coded a Python script that leveraged the fast Data-Frame library **Polars** to generate graphs with Python tool **Plotly** from a log consisting of execution details of size **10GB** to analyze execution patterns across business logic to draw conclusions on the performance and correctness of the system.

### Institute for Student-AI Teaming

September 2023 – May 2024

Software Engineer | React, Python, Node.js, AWS | [Profile](#)

Boulder, CO, USA

- Built a mechanism to track user actions on Microsoft Makecode editor, store it to **DynamoDB** and provide it to machine learning pipeline to analyze collaboration among students. Deployed the service on **AWS ECS**. [Blog](#)
- Developed **AWS lambda** that gets triggered on DynamoDB write, and generates **AMR graph** from the text transcript of the user.
- Integrated end-to-end messaging system to allow communication between students and wizard/AI-assistants such as ChatGPT, Mistral AI.

### Optum

November 2022 - March 2023

Senior Software Engineer | Java, Python, Jenkins, AEM

Bengaluru, KA, India

- Generated a **Jenkins DevOps** pipeline for automatic code build and deployment on **AEM** reducing manual work by 80%.
- Designed a module that syncs local git with **Adobe Cloud Git** and notifies the user on deployment status via email, saving 100% monitoring time.
- Coded a Python tool that compares two websites employing **Opencv-Python** and Imutils packages reducing manual work by 90%.

### SAP Labs India

June 2019 - November 2022

Software Engineer | Java, SAP UI5

Bengaluru, KA, India

- Designed and deployed **cloud-native applications** for procurement sector. This required a thorough knowledge of domain driven design and cloud architecture design principles. 100% of on-premise applications were migrated to cloud.
- Engineered **user interfaces**, **database modelling**, Kafka-based inter-service **asynchronous messaging**, and developed **authorization and security** by utilizing spring security framework.
- Integrated **Esri ArcGIS** map service to SAP UI5 version of MRS app using **APIs**. Increased user experience by 50% in visualizing the current position of the service provider, source to destination routes and travel details (considering live traffic).

## EDUCATION

### University of Colorado, Boulder

August 2023 - May 2025

Master of Science in Computer Science

GPA:4.0

Concentration: Distributed Systems, Data Center Scale Computing, Big Data Architecture, CV, NLP, Data Mining

### National Institute of Technology Karnataka, Surathkal

August 2015 - May 2019

Bachelor of Technology in Information Technology

CGPA:8.45

Concentration: Data Structures and Algorithms, Design and Analysis of Algorithms, Object-Oriented Analysis and Design, Database Systems, Software Engineering

## SOFTWARE ENGINEERING PROJECTS

### GenAI Personal Assistant – [Code](#)

Java, Spring Boot, AWS, Ollama

- Developed a GenAI Personal Assistant using Spring Boot as the backend and utilised **LangChain4j** to interact with **Llama3** through an Ollama Docker container.
- Personal Assistant is enforced to be memory-aware to track previous conversations and use them to provide context-aware responses.
- Stored conversations into **DynamoDB** for future fine-tuning and continuous improvement of the model.

### Distributed Video Analyzer - [Code](#)

Python, GCP, ZeroMQ, Socket Programming

- Developed a distributed system employing the **master-worker architecture**, in which the master node splits video into smaller chunks and distributes them to worker nodes. Each worker node works on assigned chunks for object detection.
- Employed **Google Compute Engine** to proficiently deploy and manage master and worker nodes, ensuring scalable and reliable infrastructure for distributed computing tasks.