

# CHARANI SRI VEERLA

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## SUMMARY

Results-driven Software Engineer experienced in building scalable, cloud-native applications using Java, Spring Boot, and AWS. Proficient in microservices, CI/CD, and full-stack development with a strong foundation in system design and DevOps. Adaptive and quick to learn, with hands-on exposure to AI/ML tools, LLMs, and MLOps workflows — ready to contribute to evolving team priorities.

## TECHNICAL SKILLS

**Languages:** Java, Python, SQL, Bash, JavaScript, HTML/CSS

**Software Engineering:** Object-Oriented Programming, Data Structures & Algorithms, RESTful APIs, Microservices, Service-Oriented Architecture, System Design, MVC Architecture, Agile, Scrum, SDLC, TDD, CI/CD Pipelines, RBAC

**Cloud & DevOps:** AWS (EC2, S3, Lambda, RDS, IAM, CloudWatch, CloudFormation), Docker, Kubernetes, Jenkins, GitHub Actions, Terraform, Maven, Prometheus, ELK Stack, Splunk, API Gateway, Eureka Registry, Linux/Unix

**Frameworks & Libraries:** Spring Boot, Spring MVC, Spring Security, Hibernate, React.js, JUnit, Mockito

**AI & ML:** Scikit-learn, TensorFlow, PyTorch, Pandas, A/B Testing, MLOps (Model Versioning, Secure Deployment)

**Databases:** MySQL, PostgreSQL, DynamoDB, Redis

**Tools & Monitoring:** Git, GitHub, GitLab, Postman, Swagger, Jira, Confluence, IntelliJ IDEA, VS Code

## EXPERIENCE

### The University of Alabama at Birmingham

Jul 2025 – Present

Research Assistant – UAB Heersink School of Medicine

Remote

- Building a **multi-modal, multi-agentic AI chatbot** for UAB Medicine focused on **knowledge distillation**, **agent communication protocols**, **small language models (SLMs)**, and Electronic Health Records (EHR) integration.

### The University of Alabama at Birmingham

Jan 2024 – May 2025

Graduate Teaching Assistant — Machine Learning & Software Engineering

Birmingham, Alabama, United States

- Mentored 275+ students in JavaFX GUI development, **design patterns**, and **modular design** using **SDLC** principles; reviewed **system architecture** and **backend workflows** in **Agile** team projects.
- Led lab sessions on **machine learning**, **deep learning**, and **LLMs**; guided students through **model development**, **hyperparameter tuning** while introducing **MLOps** practices such as **reproducibility**, **model versioning**, and **secure deployment** using **Scikit-learn**, **TensorFlow**, and **PyTorch**.

### The University of Alabama at Birmingham

Dec 2023 – Apr 2024

Graduate Research Assistant

Birmingham, Alabama, United States

- Built scalable, production-grade ML pipelines using **Scikit-learn**, **Pandas** and **SQL** to automate preprocessing and feature engineering across multi-year telemetry datasets, improving pipeline efficiency and reusability.
- Developed secure, role-based **Power BI** dashboards using **DAX** and row-level security, enabling real-time KPI monitoring for 120+ athletes and reducing manual reporting workload by 30%.
- Engineered modular, cloud-native **ETL pipelines** on **AWS (EC2, S3)** with CI/CD integration to automate data ingestion, validation, and transformation for ML-ready datasets.
- Applied statistical modeling and designed **A/B testing** on athlete behavior cohorts, driving a 25% increase in recovery plan adherence through actionable insights.

### Cognizant Technology Solutions India Pvt. Ltd.

Feb 2022 – Jul 2023

Software Engineer

Hyderabad, Telangana, India

- Architected and deployed scalable **Spring Boot** microservices with layered architecture, integrating **MySQL**, **JWT-based authentication**, and **REST APIs** to handle 10K+ daily transactions, reducing latency by 35%.
- Engineered end-to-end full-stack applications using **React.js**, **Axios**, and **Spring MVC**, optimizing API payloads by 28% and enhancing client-server interactions.
- Refactored monolithic modules into microservices by applying **Factory** and **DAO** patterns; implemented **TDD** with **JUnit** and **Mockito**, achieving 90%+ unit test coverage.

- Built and deployed Dockerized microservices to **AWS EC2** within secure **VPC** subnets using **Jenkins**, **GitHub Actions**, and **Maven** pipelines; reduced deployment cycles by 40%.
- Orchestrated containerized microservices using **Kubernetes** for **autoscaling**, **high availability**, and secure internal networking.
- Provisioned cloud infrastructure using **AWS CloudFormation** and **Terraform**, automating **EC2**, **RDS**, and **IAM** resources with reusable modules and remote state management.
- Configured **security groups**, **subnets**, and **route tables** in **AWS VPC** to enforce network isolation, traffic control, and secure inter-service communication.
- Integrated centralized logging using the **ELK Stack** and monitored metrics with **Prometheus**, **Grafana**, and **CloudWatch Logs**, improving observability and reducing incident response time by 25%.
- Provisioned **RDS (MySQL)** and configured **S3** for secure storage with **encryption at rest**; implemented fine-grained access control using **IAM roles**.
- Designed and developed a secure internal Employee Management System using **Spring Boot**, **PostgreSQL**, and **JWT**; implemented **OAuth 2.0**-based RBAC and session management to enforce user-role access policies.
- Applied cost optimization strategies using **AWS Cost Explorer** and auto-scaling policies, reducing infrastructure overhead by 20%.
- Maintained **Spring Cloud Gateway**, **Eureka Registry**, and **Apache Kafka** integration for dynamic service discovery, API routing, and asynchronous communication in a distributed microservices environment.
- Collaborated across Agile teams using **Jira**, **Swagger**, and **Postman** for sprint planning, API testing, and technical documentation.

## EPAM Systems India Pvt. Ltd.

Sep 2020 – Jun 2021

*Software Engineer*

*Remote*

- Completed an 18-week structured training program in **Java**, **Spring Boot**, object-oriented design, and Agile methodologies, followed by hands-on development in full-stack project environments.
- Designed and implemented modular **CLI applications** using **SOLID principles**, layered architecture, and robust validation logic for task automation workflows.
- Created integration tests and instrumented detailed logging mechanisms to support debugging of edge-case scenarios and improve code maintainability.
- Collaborated within Agile sprints using **Git**, pull requests, and branching workflows; contributed to peer code reviews.

## PROJECTS

### LLM-based Text Summarization Pipeline

Mar 2025

- Developed a transformer-based summarization tool using **Hugging Face** and **Flask**, deployed on **AWS EC2**, automating content review and reducing manual effort by 65%.

### Event-Driven Microservices Application

Dec 2024

- Built a modular, event-driven backend using **Spring Boot**, **Apache Kafka**, and deployed microservices to **Kubernetes** with **Prometheus & Grafana** for real-time observability; reduced latency by 40%.

### RAG-based Knowledge Extraction Assistant

Dec 2023

- Created a **Retrieval-Augmented Generation (RAG)** assistant with **LangChain**, **FAISS**, and **GPT-4**, enabling 92% accurate semantic answers from PDF documents.

### Employee Management System

Aug 2022

- Built a CRUD application using **React.js** and **Spring Boot**; implemented **JWT**-secured APIs with RBAC and deployed via **Docker** to **AWS EC2**, improving admin task efficiency by 50%.

## EDUCATION

### Master of Science in Computer Science

Aug 2023 – May 2025

*The University of Alabama at Birmingham (UAB), United States*

*CGPA: 4.0/4.0*

**Relevant Coursework:** Machine Learning, Deep Learning, Data Mining, Foundations of Data Science, Database Application Development, Database Systems, Cloud Security, Computer Security, Network Security

## PUBLICATIONS & CERTIFICATIONS

**IEEE Xplore Publication:** 1st & Corresponding author of [Classification of Water Vessels using Transfer Learning](#).

**Certifications:** AWS Certified Solutions Architect (In-progress), Cloud Computing 101 – AWS, Machine Learning Specialization – *DeepLearning.AI (Coursera)*, MathWorks ML/DL Onramps, Python Programming – *Python Institute*, NDG Linux Essentials – *LPI*.