Charani Sri Veerla

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Summary

Software Engineer with hands-on experience building scalable full-stack applications using Java, Spring Boot, React, and RESTful APIs. Proficient in data structures, algorithms, microservices, and system design with strong exposure to CI/CD, Docker, and AWS. Known for writing clean, maintainable code and collaborating across teams to deliver robust solutions.

Education

Master of Science in Computer Science & Cyber Security Analytics **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*

Bachelor of Technology in Computer Science & Engineering **Jun 2018 - May 2022**
Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC), India *Distinction – CGPA: 8.98/10.0*

Relevant Coursework: *Object Oriented Programming with Java, Design and Analysis of Algorithms, Advanced Data Structures, Operating Systems, Database Management Systems, Advanced Programming in Java, Compiler Design, Software Engineering, Cloud Computing, Web Technologies, Data Analytics, AI Techniques & Applications*

Technical Skills

Languages: Python, Java, C, C++, JavaScript, TypeScript, SQL, Bash, HTML/CSS

Software Engineering: Object-Oriented Programming, Data Structures, Algorithms, RESTful APIs, Low-Level Design, High-Level Design, MVC Architecture, Microservices, Design Patterns, Software Development Life Cycle Models (SDLC)

Frameworks & Libraries: Spring Boot, Spring MVC, Spring Security, Hibernate, Flask, Django, React.js, Angular, Node.js, Express.js, JUnit, Mockito, MockMVC, Redux.js, FastAPI

AI/ML: Scikit-learn, TensorFlow, PyTorch, Keras, XGBoost, Vowpal Wabbit, NumPy, Pandas, CNNs, Model Training, Deployment, Feature Engineering, Hyperparameter Tuning, MLOps, MLflow

Cloud & DevOps: AWS (EC2, S3, Lambda, CodePipeline, ECS, RDS, DynamoDB), Docker, Kubernetes, Jenkins, Terraform, CI/CD, GitHub Actions, Linux/Unix

Data Engineering & Distributed Systems: Apache Kafka, Apache Spark, Airflow, ETL Pipelines, Redis, Elasticsearch

Databases: MySQL, PostgreSQL, MongoDB, Snowflake, Amazon Redshift, DynamoDB

Visualization & Analytics: Power BI, Tableau, DAX, A/B Testing, Statistical Modeling

Tools: Git, GitHub, GitLab, VS Code, PyCharm, Jupyter Notebook, Eclipse, Visual Studio, Jira, Confluence, Postman

Experience

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 Machine Learning & Software Engineering courses, delivering **JavaFX** GUI labs, teaching **design patterns**, and guiding teams in requirements, specifications, and modular design using **SDLC**.
- Supported model development using **Scikit-learn**, **TensorFlow**, and **PyTorch**; assisted with **CNNs**, SVMs, K-Means, **Transfer Learning**, and **hyperparameter tuning** to improve predictive accuracy and model efficiency.

The University of Alabama at Birmingham **Dec 2023 – Apr 2024**
Data Science Intern, UAB Athletics *Birmingham, Alabama, United States*

- Built an end-to-end ML pipeline using **Scikit-learn**, **Pandas**, and **SQL** on 3+ years of athlete telemetry data; improved injury risk prediction accuracy by 12% through iterative model tuning and feature engineering.
- Developed secure, role-based **Power BI** dashboards with **DAX** queries, enabling 6+ coaches to monitor KPIs for 120+ athletes and reducing performance review time by 30%.
- Collaborated with analysts to run **A/B testing** experiments using cohort segmentation and statistical modeling; drove a **25% increase** in adherence to recovery plans.
- Engineered AWS-hosted **ETL pipelines** for processing 500K+ records; automated ingestion, schema validation, and normalization using **Python** on **EC2/S3**, enhancing data readiness for ML modeling.

Cognizant Technology Solutions India Pvt. Ltd. **Aug 2022 – Jul 2023**

Junior Software Engineer, Application Development & Maintenance Business Unit *Hyderabad, Telangana, India*

- Designed and deployed scalable **Spring Boot** microservices with layered architecture, integrating **MySQL**, and **REST APIs** to handle 10K+ daily transactions, improving system throughput and reducing server response times by 35%.
- Engineered, tested, and integrated robust **RESTful APIs** using **Spring MVC** to streamline backend workflows, optimize JSON payload structures, and reduce inter-service latency across distributed services by 28%.
- Led the migration of 5+ legacy dashboards to **React.js**, building modular front-end components, implementing protected routing and state management, and improving UI responsiveness and cross-browser consistency.
- Refactored tightly coupled monoliths into decoupled services using core **design patterns** (Factory, DAO); applied test-driven development with **JUnit** and **Mockito**, achieving 90%+ test coverage and reducing bugs in production.
- Created and maintained automated CI/CD pipelines using **Jenkins**, **Maven**, and **GitHub Actions**, streamlining build/test/deploy for 3+ microservices and cutting release downtime by 40%.
- Collaborated with QA, DevOps, and Product teams during Agile sprints, streamlining workflows using Jira, Postman, and Swagger for sprint planning, API validation, and release documentation.

Cognizant Technology Solutions India Pvt. Ltd. **Feb 2022 – Aug 2022**

Junior Software Engineer Intern, Java Full-Stack Engineering *Hyderabad, Telangana, India*

- Completed full-stack training in **Java**, **Spring Boot**, **React.js**, and **Microservices**, gaining hands-on experience in building layered enterprise-grade applications with both frontend and backend integration.
- Developed an Employee Management System using Spring Boot and PostgreSQL, implementing **JWT authentication**, session management, and role-based authorization for secure access control across user roles.
- Built reusable class-based and functional React components, connected via **HTTP Axios** to backend services, and tested all endpoints using **Postman**, ensuring seamless CRUD functionality and UI consistency.
- Configured **API Gateway** and **Eureka Service Registry** in Spring Cloud for centralized routing, dynamic service discovery, and scalable communication between distributed microservices.

EPAM Systems India Pvt. Ltd. **Sep 2020 – Jun 2021**

Junior Software Engineer Intern *Remote*

- Completed EPAM's 18-week PEP training on Java, clean coding, Agile workflows, and industry-grade practices.
- Built modular CLI apps in Java using SOLID principles and layered architecture for task and inventory management.
- Developed integration tests, applied file-based input validation, and used logging to debug edge-case behavior.
- Practiced code reviews, Git branching workflows, and sprint retrospectives in collaborative agile projects.

Projects

LLM-powered Research Assistant using RAG Architecture | GPT-4, LangChain, OpenAI API **Mar 2025**

- Engineered a RAG-based pipeline with GPT-4 and FAISS for academic document Q&A, reducing manual research effort by over 70% and improving retrieval accuracy.

CNN-based Pediatric Bone Age Assessment | Python, ResNet, DenseNet, OpenCV **Jan 2025**

- Trained and fine-tuned ResNet-50 and DenseNet-121 using transfer learning on grayscale X-rays; achieved a 91.2% accuracy and MAE of 4.1 months in age prediction.

U-Net Based Lung Segmentation | Python, Keras, U-Net, OpenCV, Medical Imaging **Aug 2024**

- Implemented U-Net for semantic segmentation of chest X-rays; achieved a 91% Dice coefficient and enhanced mask quality via morphological post-processing.

Logistic Regression Breast Cancer Diagnosis | Python, Newton's Method **Dec 2023**

- Achieved 98.2% accuracy on the Wisconsin dataset using logistic regression with Newton's method, converging 5× faster than gradient descent.

Leadership & Achievements

IEEE Xplore Publication: 1st & Corresponding author of Classification of Water Vessels using Transfer Learning.

Certifications: Machine Learning Specialization – *DeepLearning.AI (Coursera)*, GPT Prompt Engineering – *OpenAI & DeepLearning.AI*, MathWorks ML/DL Onramps, Python Programming – *Python Institute*, NDG Linux Essentials – *LPI*.

Academic Student Leader: Oriented 30+ new CS grads on curriculum planning, financial prep, and campus resources; led data tool workshops for research project readiness.

Computer Science Tutor: Delivered targeted tutoring to 15+ grad students in ML, Cloud Security, Database Systems.

Competitive Programming: *HackerRank Gold* – Python, Java, SQL | *LeetCode*: 100+ problems solved.