GEETHIKA KOLUKULURI

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Entry-level Software Engineer with a Master's degree in Applied Computer Science and hands-on experience building cloud-deployed, API-driven backend systems using Java, Spring Boot, REST APIs, AWS, and Docker. Strong foundation in Agile development and scalable application design.

WORK EXPERIENCE

Software Engineer *Mar 2023 - Apr 2024*
TechNova Solutions Pvt. Ltd., Hyderabad, India

- Designed scalable backend services using Java, Spring Boot, and REST APIs, collaborating with frontend teams consuming APIs via JavaScript-based frameworks to support modular web applications serving over 15,000 monthly user interactions.
- Built microservices using Spring Data JPA, MySQL, and optimized SQL queries, reducing database latency by 20% while enabling seamless integration with UI layers developed using HTML, CSS, and modern frontend frameworks.
- Integrated secure authentication and authorization workflows using JWT, Spring Security, and role-based access controls, enabling protected API consumption across distributed services deployed on AWS EC2 infrastructure.
- Deployed containerized backend services using Docker, orchestrating CI/CD workflows with Git and Maven, accelerating release cycles by 30% while aligning deployments with Agile and DevOps practices.
- Improved application reliability through JUnit, Mockito, and automated integration testing, increasing code coverage to 85% and supporting continuous integration pipelines aligned with enterprise software quality standards.

Graduate Assistant – Mobile Computing (iOS)
Northwest Missouri State University, Maryville, MO

- Served as a Graduate Assistant for a Mobile Computing (iOS) course, supporting instruction and hands-on labs focused on Swift, SwiftUI, and native iOS development fundamentals.
- Mentored undergraduate and graduate students in designing and implementing iOS applications, emphasizing clean architecture (MVVM), state management, and reusable UI components.
- Assisted students in debugging complex issues related to app lifecycle, asynchronous networking, memory management, and SwiftUI view updates.
- Reviewed student codebases and provided technical feedback on code quality, architectural decisions, and performance considerations.
- Supported the creation and evaluation of programming assignments and projects that simulated real-world mobile development workflows.
- Helped students transition from theoretical concepts to production-style iOS code, reinforcing best practices, error handling, and testing strategies.
- Collaborated with course instructors to ensure alignment between course objectives and industry-relevant iOS development skills.

PROJECT EXPERIENCE

Cloud-Based IoT Healthcare Monitoring Simulation
Java, CloudSim Plus, EdgeCloudSim, VMs, DataCenters, Broker Models

- Engineered distributed simulation systems using Java, CloudSim Plus, and modular architectures to model cloud workloads aligned with enterprise microservices deployed across AWS and container-based cloud platforms.
- Implemented backend processing pipelines using REST APIs, structured SQL datasets, and performance metrics analysis to enable scalable experimentation across cloud and edge environments with API-driven visualization layers.
- Analyzed latency, throughput, and resource utilization to optimize system performance, achieving 25% efficiency improvements while aligning results with DevOps-driven scalability and deployment strategies.
- Configured automated workflows using Git, Maven, and CI validation steps, ensuring reproducible builds and consistent deployments aligned with Agile development and continuous integration practices.
- Delivered structured analytical reports and dashboards translating simulation results into actionable insights applicable to enterprise software systems and distributed application design.

Early Detection of Rheumatic Heart Disease – ML-Driven Clinical System
Machine Learning, Java, REST APIs, Python, scikit-learn

- Developed a hybrid machine learning framework combining Random Forest, SVM, and Neural Networks using feature-fusion techniques to improve early-stage disease prediction accuracy across heterogeneous clinical and echocardiographic datasets.
- Engineered scalable backend integration layers using Java and REST APIs to orchestrate data preprocessing, model inference, and result aggregation, enabling reliable API-based consumption by downstream clinical applications.
- Implemented robust data preprocessing pipelines including normalization, missing-value handling, feature selection, and outlier detection, improving data quality and reducing false negatives by 18% across validation datasets.
- Optimized model inference workflows for low-latency predictions and higher throughput, ensuring consistent performance under concurrent request loads while maintaining clinically acceptable accuracy thresholds.

PollutionDetectorApp: iOS Pollution Monitoring & Analysis Application
SwiftUI, MVVM Architecture, Rest API Integration, Real - Time data Processing

- Developed a native iOS application in Swift to monitor air quality and noise pollution using real-time environmental and traffic sensor data.
- Implemented data-processing pipelines to normalize heterogeneous sensor readings, compute pollution indices, and generate time- and location-based metrics.
- Designed and built an interactive UI using SwiftUI, visualizing complex data through dynamic charts, map-based views, and real-time alerts.
- Integrated backend APIs within a modular architecture to support real-time data retrieval, efficient storage, and scalable feature updates.
- Applied production-focused engineering practices including robust error handling, performance optimization, and unit testing to ensure reliability across devices.

CONFERENCE PRESENTATIONS

Pollution Detector: An Interactive iOS App for Environmental Awareness
MINK-WIC Conference (Kansas – Women in Computing)

- Presented a production-ready iOS application built using Swift and SwiftUI, demonstrating real-time air, water, soil, and noise pollution analysis through interactive visualizations to academic and industry audiences.
- Explained end-to-end system architecture, modular design, backend API integration, data processing models, and usability-driven UI decisions, effectively communicating complex technical concepts to diverse stakeholders.
- Demonstrated real-world data interpretation, metric calculation logic, and scalability considerations aligned with modern software engineering best practices and cloud-backed application deployment.

SKILLS

Programming Languages: Java, Python, Swift, JavaScript

Frameworks: Spring Boot, Spring MVC, Hiberante, TensorFlow, PyTorch

Web: HTML, CSS, Rest API Development

Databases: MySQL, MongoDB, SQL, PostgreSQL

Cloud & DevOps: AWS EC2, CI/CD, Docker, Git, Maven

Testing & Practices: JUnit, Mockito, CI/CD, CloudSim Plus, EdgeCloudSim, Agile, REST APIs, Microservices

EDUCATION

Master's in Science, Applied Computer Science *Aug 2024 - Dec 2025*
Northwest Missouri State University.
- Received Scholarship along with the Graduate Assistantship

Bachelor of Technology, Computer Science and Engineering *Jan 2020 - Mar 2024*
Lendi Institute of Engineering and Technology, JNTUK