

# Geethakrishna Puligundla

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## Education

**Master of Science in Computer Science** | *Clemson University, Clemson, SC* | GPA: 3.9/4.00

**Aug 2023 - May 2025**

**Bachelors Of Technology in Computer Science** | *JNT University, India* | GPA: 8.51/10.00

**Aug 2016 - Sep 2020**

## Technical Skills

Java, Python, Spring Boot, React, JavaScript, TypeScript, HTML, CSS, Node.js, Django, Oracle MySQL, PostgreSQL, Redis, JUnit, Mockito, Kafka, RabbitMQ, Git, Maven, Docker, Kubernetes, Prometheus, Grafana, Linux, Agile, REST API, GraphQL, TDD, CI/CD, Jenkins, GitHub Actions, [Certified AWS Solutions Architect](#) (Lambda, S3, EC2, DynamoDB, Cognito, BedRock), GenAI, RAG, LLMs, OpenAI, LangChain

## Work Experience

**Software Engineer** | *Clemson University, Clemson, SC*

**Jan 2024 – May 2025**

- Developed full-stack research data applications for water filtration projects using Java, Spring Boot, React, and PostgreSQL, managing over 100,000 reports to enhance experimental data management and analysis efficiency.
- Executed ETL pipelines to process raw CSV/JSON data sources, applying validation and transformation scripts before loading cleaned data into the database, boosting data quality and query performance.
- Built interactive data visualization dashboards in React with TypeScript, enabling over 50 researchers to identify trend patterns more efficiently and reducing manual efforts.
- Engineered a generative AI Slack-bot using Amazon Bedrock, LangGraph, and OpenAI to convert natural language queries into SQL statements, enabling precise data retrieval from a PostgreSQL database.

**Software Engineering Intern** | *Musco, Urbandale, IA*

**May 2024 – Aug 2024**

- Architected serverless Python APIs using AWS Lambda, Cognito and DynamoDB that reduced infrastructure costs by 30% while maintaining 99.99% uptime, enabling scalable communication across 1000+ edge devices.
- Migrated time-consuming HTTP APIs to WebSocket APIs, eliminating timeouts for long-duration processes exceeding 2 minutes and improving user experience.
- Spearheaded the architecture of a real-time observability pipeline using AWS CloudWatch Agent, SNS, and Lambda, automating log monitoring and alerting to eliminate ~5,160 hours of manual work.
- Developed a responsive, dynamic frontend using React, TypeScript, and MUI; implemented state management via Redux. Integrated WCAG accessibility standards boost user engagement by 20% and enhance digital inclusivity.

**Software Development Engineer** | *Sonicwall, Bengaluru, India*

**Jun 2022 – Jul 2023**

- Enhanced the configuration Migration Tool using Java, Spring Boot, and React, reducing customer onboarding time from days to hours and contributing to a 6% increase in global sales.
- Developed and deployed microservices using Java, Spring Boot, and Kafka, orchestrated on Kubernetes, facilitating real-time data exchange and aligning with event-driven architecture principles.
- Implemented a metrics dashboard using Prometheus and Grafana, streamlined the CI/CD pipeline with automated testing and code quality checks, and improved deployment success by 25% while enhancing system visibility.
- Built a Python, Django diagnostic tool on AWS to automate ticket log analysis, flagging known issues, and saving the support team ~15 hours per week.

**Associate System Engineer** | *Tata Consultancy Services, Bengaluru, India*

**Sep 2020 – Jun 2022**

- Accelerated API response time from 1sec to ~250ms by optimizing REST APIs using Java, Spring Boot, implementing Redis caching and SQL query tuning, validated via load testing.
- Optimized data access strategies using Spring Data JPA and Oracle MySQL, defining custom repositories and native queries that improved data retrieval performance by 20% for critical application workflows.
- Led the migration of a legacy jQuery to React, TypeScript and improved frontend performance by 25%; built a dashboard leveraging reusable components, custom hooks, Redux, and Server-Sent Events (SSE) for real-time updates.
- Strengthened system resilience by 25% by implementing fault tolerance patterns with Resilience4j and asynchronous processing with RabbitMQ, validated via JMeter stress tests and Prometheus/Grafana monitoring.
- Reduced post-deployment defects by 50% by creating 100+ JUnit tests using Test-Driven Development (TDD) and Mockito, resulting in 92% code coverage and improved application stability.

## Projects

**RAG-powered PDF Chatbot** – Developed a full-stack Retrieval-Augmented Generation (RAG) system using Python, Langchain, Streamlit, and Ollama LLMs, featuring PDF parsing, vector search with ChromaDB, multi-query retrieval, and a responsive chat-based UI for intelligent document querying with 95%+ contextual accuracy.

**Festive Fusion** – Built a 3-level Python game with save/load functionality using object-oriented design with Memento, Singleton, and Factory design patterns to improve gameplay and maintainability.