

# PURNA MUMMANI

+1 (704) 299-0350 | [purna.mummani12@gmail.com](mailto:purna.mummani12@gmail.com) | [LinkedIn](#) | [Github](#) | [Portfolio](#)

## Summary

Software Engineer with 3 years of experience optimizing scalable, high-performance enterprise applications using Java, Spring Boot, React, and RESTful APIs. Strong expertise in full-stack development, cloud-native architectures, API engineering, database optimization, CI/CD automation, and Agile delivery models. Proficient in AWS and Docker for containerization to streamline deployments, improving system reliability and accelerating release cycles for platforms used by millions of users.

## Work Experience

**IBM** Jun 2025 – Present

### Software Engineer

Remote, NC

- Contributed to the design and development of scalable **microservices** using **Java, Spring Boot, and React** for platforms supporting **2M+ active users** globally across internal and client-facing enterprise systems.
- Architected and optimized **RESTful APIs** integrated with **OAuth 2.0 and JWT** for role-based access control; improved **PostgreSQL and Oracle** query performance by **~30%** through redesigned indexing strategies and transaction handling.
- Built reusable UI components using **React and TypeScript**, collaborating with senior engineers to improve dashboard rendering efficiency and achieve **~24%** faster page load times.
- Strengthened **CI/CD** automation pipelines using **Jenkins, GitHub Actions, and Docker** reducing manual deployment effort and improving release cycle consistency across development and staging environments.
- Containerized backend services and supported **Kubernetes** based deployments on **AWS (EC2, RDS, S3, Lambda)**, improving environment consistency and reducing release rollback incidents through optimized service orchestration.
- Monitored application health and performance using **AWS CloudWatch** and centralized logging tools, proactively identifying bottlenecks and reducing mean time to resolution (**MTTR**) by **~29%** across distributed production systems.

**UNCC: Office of Assessment and Accreditation**

May 2024 – Apr 2025

### Graduate Research Assistant

Charlotte, NC

- Conducted data-driven research on student learning outcomes using **Python, Excel, and SQL** for statistical analysis and developed interactive **Tableau/Power BI** dashboards to automate grading analytics and reporting workflows, contributing to a **~20%** improvement in assessment strategies and reducing instructor grade processing time by **~25%**.

**Accenture**

Jan 2022 – Dec 2023

### Software Engineer

Hyderabad, India

- Developed and maintained enterprise-grade backend applications using **Java, Spring MVC, and Hibernate ORM** to support complex business workflows, processing **1M+ transactions per day** via Apache Kafka event streaming pipelines and reducing application downtime by **~28%** through modular fault isolation.
- Built full-stack interfaces using **Angular and RESTful services**, optimizing **MySQL and Oracle** database schemas to achieve **~34%** faster data retrieval and measurably reducing end-user support tickets.
- Automated CI/CD pipelines and testing using **JUnit, Mockito and BitBucket**, increasing test coverage to **85%** while migrating services to **AWS**, resulting in a **25% reduction** in infrastructure costs.

## Technical Skills

**Programming Languages:** Java, Python, C++, JavaScript, TypeScript, SQL, HTML, CSS

**Frameworks:** React, Node.js, Express.js, Angular, Spring Boot, MVC, JPA, Hibernate, PyTorch, OpenCV, FastAPI, Flask

**Databases:** MySQL, PostgreSQL, NoSQL (MongoDB), Redis

**Developer Tools:** Git, Github, Apache spark, Hadoop, Kafka, Maven, ZooKeeper, LangChain, Langflow, Pinecone, Jupyter, TensorFlow, Google Colab, Tableau, JIRA, Confluence, Postman, BitBucket, Streamlit

**Cloud Services:** AWS(EC2, S3, RDS, Lambda, CloudWatch), Docker, Kubernetes, Jenkins, GitHub Actions, Azure, CloudFormation, API Gateway

**Core Competencies:** Enterprise SaaS, Microservices, End-to-End System Design, CI/CD, Distributed Systems, Agile, SDLC, RESTful APIs, Full Stack.

## Projects

**Real-Time Video Action Detection System** | *PyTorch, Python, Transformers, OpenCV*

- Developed a real-time action detection pipeline using **PyTorch, CNN-Transformer**, and **OpenCV** to identify and localize human actions in untrimmed videos and implemented a multi-resolution feature fusion to optimize computational efficiency by **85%**.
- Deployed the system on **AWS EC2** using **Python, FastAPI, AWS S3** and integrated **Lambda** for video preprocessing achieving **8 FPS** real-time detection and processing **2,000+** video clips daily under load-tested conditions.

**Multi-Agent AI Workout Application** | *Python, Langflow, AstraDB, Streamlit, LLMs*

- Built a multi-agent AI personal trainer using **Python and Langflow**, coordinating autonomous **LLM** agents across workout generation, nutrition planning, and sleep optimization, automating health-data retrieval workflows with intelligent task routing via **OpenAI API** and **REST APIs**, achieving **<5s** average agent response latency.
- Engineered a **RAG pipeline** with AstraDB vector search for context-aware fitness recommendations, built a **Streamlit** frontend with **JWT** authentication and health metrics tracking, deployed on **AWS EC2** with **CI/CD** via **GitHub Actions**.

**NextStep AI: AI-Powered Resume Matching Platform** | *Agentic AI & Cloud-Native*

- Architected an AI job-matching agent using **Python and Ollama (Local LLMs)** with **SentenceTransformers** to generate semantic similarity analysis for resume-to-job alignment, reducing manual screening time by **~80%** and improving match accuracy through foundation model embeddings.
- Developed a dynamic backend pipeline in **Python** using **AWS SQS** and **Lambda**, integrated SerpAPI and **Indeed RSS** for real-time job retrieval on **AWS S3**, enabling asynchronous skill-gap analysis to optimize cost for targeted applications.

## Education

**University of North Carolina at Charlotte** GPA: 3.8/4

Jan 2024 – Dec 2025

Master of Science in Computer Science

Charlotte, NC

**Courses:** Data Structures & Algorithms, Object Oriented Analysis, Database Systems, Cloud Computing, Software System Design and Implementation, Visual Analytics, Artificial Intelligence, Machine Learning and Distributed Systems