


# Rohan Paul Potnuru

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## Summary

Motivated Software Engineer with hands-on experience in AI/ML applications, DevOps, and full-stack development. Experienced in Python, Java, Go and C++, and well-grounded in software engineering logic, agile development, and cross-functional teamwork. Familiar with developing AI pipelines, scalable applications, and cloud-native solutions with modern frameworks and development methodologies. Passionate about generative AI, Dev/MLOps, and cutting-edge software innovation, with the adaptability to rotate across diverse projects and deliver impactful results.

## Education:

### Master of Science in Computer Science

08/2023 - 05/2025

University of North Texas – Denton, TX

- Thesis: “Optimizing game learning for Scalable Educational VR Simulations”
- Relevant Coursework: Big Data Analytics, Distributed Systems, Database Systems, Machine Learning

### Bachelor of Technology in Computer Science Engineering

07/2019 - 05/2023

Gitam – Visakhapatnam, Andhra Pradesh, India

- Final Project: AI-Driven Predictive Maintenance System for Industrial IoT Devices
- Relevant Coursework: Data Structures, Operating Systems, Software Engineering

## Research Publications:

1. The Implications of Technology Usage in the Treatment of Behavior Disorders in Children – IGI Global
2. Innovative Helio-STELLA Spectrometer Kit for STEM Education – NASA, SITE Conference
3. MarsCity: A Chatbot-Supported Virtual Reality Strategy Game for Scaffolding Design Thinking in STEM Education – EdMedia

## Academic Projects:

### AI-Powered Document Summarizer:

Created NLP pipelines to analyze unstructured financial/legal documents with Transformers. Introduced automatic summarization and entity recognition on compliance workflows. Increased reporting velocity by 50 percent and decreased manual review.

### Generative AI Chatbot (LangChain + Vector DB):

Created a context-sensitive chatbot with LangChain and a vector database to support effective dynamic Q&A. Added embeddings to support semantic search and retrieval to enhance the quality of responses by 40 percent. Deployed backend in form of APIs that would integrate smoothly with enterprise tools.

### Cloud-Based ML Deployment

Designed and implemented ML models in AWS ECS, Lambda, and S3 using CI/CD pipelines through GitHub Actions. They implemented workflows in containers with Docker and automated scaling with Kubernetes. Decreased deployment cycle time in days to hours.

### Full-Stack Analytics Dashboard

Designed and implemented a React + Django web application to visualize real-time AI/ML outputs. Integrated APIs for data ingestion and PostgreSQL backend for structured analytics. Enabled stakeholders to make data-driven decisions with intuitive dashboards.

## Technical Skills

**Programming:** Python, Java, C++, JavaScript, Bash, SQL

**Frameworks/Tools:** React, Node.js, Flask, TensorFlow, PyTorch

**AI/ML:** Generative AI, Prompt Engineering, AI Pipelines (LangChain, LangGraph), Data Engineering (ETL, ingestion, cleansing)

**Databases:** PostgreSQL, MySQL, Vector Databases, Graph Databases

**Cloud & DevOps:** AWS, Azure, GCP, Docker, Kubernetes, Jenkins, GitHub Actions, CI/CD, MLOps

**Practices:** Agile, Pair Programming, Extreme Programming (XP), Test-Driven Development

**Other:** REST APIs, Microservices, Data Pipelines, Monitoring/Logging (Prometheus, ELK stack)

## Professional Experience

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### Research Assistant | University of North Texas

09/2023 – 05/2025

Developed and implemented AI-based software to process and visualize data, incorporating machine learning mechanisms to derive meaning out of large volumes of data.

Automated testing and deployment using DevOps pipelines, GitHub Actions and Jenkins, and decreased release cycles by 30%.

Worked in cross-functional teams to provide end-to-end solutions in AI research, data science, and cloud-based system architecture.

Carried out experiments on generative AI and optimized model performance based on the usage of vector databases and prompt engineering.

### JM Baxi Group | Software Engineering Intern

05/2022 – 11/2022

Worked on RESTful APIs and backend services using Django and made sure that they will be able to handle production loads.

Developed streaming and batch data ingestion pipelines in Python and SQL.

Added cloud-native capabilities to AWS (Lambda, EC2, ECS) to support real-time analytics and application scalability.

Engaged in agile development lifecycle, pair programming and code reviews, which increased team productivity and product quality.

## Certifications

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AWS Certified Data Engineer – Associate (*In Progress*)

Google Cloud Professional Data Engineer