

Rohith Chekuri

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EDUCATION

The University of Texas at Dallas

Master of Science, Computer Science (Expected Graduation)

– Coursework: Artificial Intelligence, Machine Learning, Natural Language Processing, Data Analysis and Management Techniques, Information Security, Network Security, System Security and Malicious Code Analysis, Advanced Operating Systems

Richardson, TX

January 2025 – May 2026

National Institute of Technology Durgapur

Bachelor of Technology, Computer Science

West Bengal, India

August 2019 – May 2023

TECHNICAL SKILLS

Languages & OS: Python, Java, C++, C, Bash, JavaScript, Linux Internals (Ubuntu, EndeavourOS), Operating Systems

Certifications: AWS Certified Solutions Architect – Associate | [Verification Link](#) (ID: 0c7a5da301b34e69ae8fb63144eba7b7)

DevOps & Databases: Kubernetes (K8s), Docker, CI/CD Pipelines, AWS (EC2, S3), PostgreSQL, MySQL, MongoDB

Web & AI Integration: Generative AI, Large Language Models (LLMs), RESTful APIs, JSON Web Tokens (JWT), Node.js

Software Engineering: Backend Architecture, Big Data Optimization, Distributed Systems, Object-Oriented Programming

PROFESSIONAL EXPERIENCE

Research Assistant - Independent Study

January 2026 – May 2026

The University of Texas at Dallas, Advisor: Prof. Xinda Wang

Richardson, TX

- Architected scalable backend software features using Python and C++ to solve large-scale, highly complex technical problems in automated vulnerability detection for enterprise environments.
- Diagnosed critical issues in Large Language Model deployments, conducting rigorous statistical analysis and metrics calculation to systematically minimize false positive rates in testing protocols.

Teaching Assistant

August 2025 – May 2026

The University of Texas at Dallas

Richardson, TX

- Participated in technical discussions to evaluate complex application architectures and algorithmic deployments, assisting in metrics calculation and continuous grading for over 50 graduate students.
- Mentored students through regular office hours, resolving unique, highly complex debugging challenges in advanced operating systems and network security projects while streamlining evaluation workflows.

Full-stack Developer

July 2023 – August 2024

Axis Bank

Mumbai, India

- Built new features and engineered large-scale backend support for enterprise applications, partnering with engineers to accelerate system performance by 40% through big data pipeline optimization and database indexing.
- Architected secure RESTful APIs fortified with JSON Web Tokens (JWT), participating in technical discussions and cross-functional collaborations to deliver reliable, highly available backend services.
- Troubleshooted highly complex technical problems and developed automated Python workflows, driving data-driven decisions that reduced manual operational overhead by 50% across all business deployments.
- Engineered comprehensive metrics calculation pipelines and conducted rigorous statistical analysis on big data, partnering with product managers to accurately evaluate service upgrades and support the rapid iteration of enterprise features.

Research Intern

May 2022 – June 2022

Indian Institute of Technology

Indore, India

- Designed high-performance AI backend solutions for computer vision applications, engineering comprehensive testing strategies on big data to optimize statistical hyperparameter tuning.

PROJECTS

Multi-Stage Vulnerability Detection System (MulVul)

- Architected and deployed a large-scale backend system for automated vulnerability detection, integrating large language models to empower data-driven decisions and enhance enterprise code reliability.
- Constructed advanced classification pipelines utilizing fine-tuned transformer models, performing rigorous metrics calculation to achieve a highly accurate 0.783 F1 score and prevent production regressions.
- Engineered a high-performance custom C++ parser leveraging object-oriented programming to solve unique, highly complex technical problems related to low-level data-flow dependencies.
- Dynamically processed, cleaned, and deduplicated over 80,000 discrete system operations to construct pristine big data training sets, maintaining full ownership of technical delivery schedules.

K-Query – AI-Powered DevOps Automation Platform

- Built new features for an AI-powered DevOps platform utilizing FastAPI and Python, delivering robust backend support that enables developers to instantly query complex infrastructure statuses.
- Integrated Kubernetes and Prometheus APIs to calculate metrics and dynamically stream real-time cluster deployment statuses, drastically accelerating root-cause analysis for system bottlenecks.
- Architected a Retrieval-Augmented Generation (RAG) pipeline utilizing a highly optimized Qdrant vector database, enabling rapid semantic search across internal operational runbooks and FAQs.
- Orchestrated robust, multi-architecture container deployments utilizing Docker, Kustomize, and Kubernetes manifests, solving large-scale availability challenges via Horizontal Pod Autoscaling.