

Aryan Kondapally

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EDUCATION

University of Texas - Austin

B.S in Computer Science

Austin, TX

May 2028

B.S in Mathematics

May 2028

Relevant Courses:

Data Structures, Algorithms and Complexity, Operating Systems, Computer Architecture, High-Performance Programming, Artificial Intelligence

EXPERIENCE

IBM — Software Engineer Intern

May – Aug 2026

- Built **Beacon**, an internal Java/Gradle framework that automated compliance and deployment-readiness validation for Docker, Kubernetes, and OpenShift applications.
- Implemented extensible log, security, and configuration validators with automated compliance scoring and reporting, reducing manual application review by 50%.
- Developed Docker and file-based collectors and configurable CI/CD validation profiles used across IBM's WebMethods and APICConnect teams.

Uber — AI Systems Engineer (Contract)

September 2025 – present

- Built deterministic Python evaluation packages for LLM agents, pairing task specifications with runnable commands, automated tests, and rubric-aligned expected outputs across 10+ tasks
- Developed pytest validation harnesses for execution behavior, output integrity, tensor dimensions, and metric thresholds across different environments
- Implemented discrepancy logging between agent-generated and expected solutions, enabling systematic triage of recurrent model failures and reducing manual validation significantly

The University of Texas at Dallas — Software Engineer Research Intern

June – September 2023

- Built Python/Qiskit pipelines to transpile, route, and benchmark circuits across IBM Q qubit layouts and hardware topologies.
- Identified an 80% simulation–hardware gap by analyzing routing, parallel execution, proximity, noise coupling, and crosstalk.
- Collaborated with PhD researchers and coauthored a **published paper** on CNOT-induced crosstalk and hardware-connectivity.

PROJECTS

HornsTraffic | *SwiftUI, Node.js, Express, MongoDB, Mongoose, JWT*

May 2025 – Present

- Built and deployed a full-stack iOS application using SwiftUI, Node.js, Express, and MongoDB to collect, persist, and visualize real-time UT Austin gym occupancy data.
- Designed JWT-secured REST APIs for administrator authentication, data ingestion, and gym-specific historical and real-time occupancy queries.
- Implemented MVVM architecture, Apple Charts visualizations, automatic refresh, and synthetic fallback handling to maintain availability during missing data updates.

chARM System Emulator and Cache Simulator | *C*

Spring 2025

- Built a full-system chARM-v3 emulator in C with a five-stage pipelined CPU implementing instruction fetch, decode, execution, memory access, and writeback.
- Incorporated hazard detection and control mechanisms, including stall, flush, and forwarding logic to mitigate pipeline hazards
- Integrated a configurable trace-driven cache simulator with the processor pipeline to model memory latency and evaluate performance across block sizes, associativities, and replacement policies.

Learning Geometry on Fixed Topologies for GNNs

January 2026

- Built a geometric learning framework comparing learnable Riemannian metrics on fixed topologies against fixed-geometry GNNs
- Implemented fixed, learnable, and frozen-metric GNN variants and ran ablations on synthetic manifolds and the Cora graph.
- Improved Cora node-classification accuracy by 6.2 percentage points over the fixed-metric baseline with under 15% additional training overhead and no inference-time cost.

TECHNICAL SKILLS

Languages: Java, Python, C, TypeScript, JavaScript, SQL, Swift, Bash

Frameworks/Libraries: PyTorch, React, Node.js, Express.js, SwiftUI, Qiskit, pytest

Infrastructure/Tools: Docker, Kubernetes, Git, Linux, Gradle, MongoDB, OpenTelemetry