

Aaditya Mishra

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EDUCATION

North Carolina State University

Expected May 2027

B.S. Computer Engineering, Minor in Economics

Raleigh, NC

Relevant Coursework: Data Structures & Algorithms (C++), Microprocessor Architecture, Digital Logic Design (Verilog), Computer Architecture

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++, Rust, SQL

Frameworks: PyTorch, JAX, React, React Native, Next.js, Node.js

Tools: AWS (EC2, S3, IAM, Auto Scaling, ELB, VPC), Azure DevOps, Docker, PostgreSQL, Apache Kafka, GitHub Actions, Git, Linux

WORK EXPERIENCE

Cast & Crew

June 2026 – Present

AI Engineer Intern

Burbank, CA

- Built a diagnostic CLI tool that traces failed payroll files through Amazon S3, databases, and Kafka, **cutting median investigation time 18%** by eliminating manual downloads and reruns.
- Built and deployed a Dockerized CI gate on AWS EC2 that compares every PR with main, controls for LLM nondeterminism, and **blocks regressions without multi-hour manual validation**.
- Designed an in-house transformer-based document extraction model to replace a third-party vendor; now leading initial training on a **10,000-file payroll corpus**.

Computational Mechanics and AI Laboratory, NC State

January 2026 – Present

Undergraduate Researcher

Raleigh, NC

- Built a differentiable fluid-dynamics simulator in **JAX** for gradient-based parameter estimation, running **2.4x** faster than the existing solver.
- Recovered vessel stiffness and thickness parameters from simulated pressure and flow waveforms via gradient-based optimization (L-BFGS), validating estimates against **known ground truth**.
- Showed that low-loss waveform fits can hide incorrect physical parameters; targeted flow measurements **cut recovery error 48%** under 1% noise.

Nutanix

May 2025 – August 2025

Systems Engineering Intern

Durham, NC

- Implemented **RAG** with embedding-based retrieval in SE-GPT, improving answer accuracy **40%** on complex hybrid-cloud queries.
- Automated data ingestion and preprocessing for SE-GPT's **NC2** knowledge graph, cutting query-resolution time **25-30%** for global Systems Engineers.

NC State SolarPack

August 2024 – Present

Programming Lead

Raleigh, NC

- Integrated live **CAN telemetry** from six vehicle controllers into the race-day driver display and resolved **16 embedded C++ firmware defects** across braking, battery, and drivetrain systems.

PROJECTS

Gilfoyle | *Electron, React, TypeScript, Rust, N-API*

- Built a cross-platform desktop environment for **Claude Code** with persistent PTY sessions.
- Reduced session-indexing latency **4x** across 1,800 sessions via parallel **Rust**, from 2.8s to 0.7s.

NewsNine | *React Native, Expo, TypeScript, Supabase, PostgreSQL*

- Shipped NewsNine to the **Apple App Store** with Apple/Google authentication, personalized feeds, and push notifications.
- Built a serverless pipeline ingesting coverage from **30+ publishers** with four-provider summarization failover.

Curious-Training | *Python, PyTorch, CUDA, vLLM*

- Designed and trained an **83.4M-parameter** side transformer attached to a frozen 4.02B **Qwen3** model, reducing held-out next-token loss **5.6%** without updating the backbone.
- Built the end-to-end GPU training stack for an **8,292-trajectory** coding corpus, with mixed-precision training and watchdog-guarded checkpoint recovery across cloud GPU runs.