Veer Mickey Shah

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Education

M.S. in Computer Science, Intelligent Systems — Aug 2026 – May 2027
University of Texas at Dallas — *GPA: 4.00*

- **Coursework:** Machine Learning, Deep Learning, Artificial Intelligence, Database Design, Compiler Construction

B.S. in Computer Science — Aug 2023 – May 2026
University of Texas at Dallas — *GPA: 3.89*

- **Honors:** CS Honors, National Merit Finalist Scholarship, Magna Cum Laude. **Coursework:** Data Structures and Algorithms, Statistics/Probability, Linear Algebra, Operating Systems, Computer Architecture, Software Engineering

Experience

Software Engineering Intern — Jun 2026 – Aug 2026
Capital One — *Plano, TX*

- Engineered a network-automation platform on **AWS ECS Fargate** that schedules and runs **Ansible** playbooks across a **3,400+ device** fleet (50+ sites, 90+ hardware models, 7 vendors) to detect configuration drift, built as a **Python/Flask** service and **SQS** worker on **DynamoDB**, deployed to 2 regions via **AWS CDK**.
- Built a **distributed scheduler** using **DynamoDB conditional writes** as an atomic lock, preventing duplicate playbook runs across concurrent workers in both regions, and added runtime versioning serving **127 playbooks** on demand from **Artifactory**.
- Led the **multi-region production launch**, implementing **KMS CMK encryption**, **DynamoDB global tables**, cross-region replication, and **least-privilege IAM**, while hardening endpoints against **SSRF**, path traversal, and log injection.
- Delivered observability and compliance hardening with structured **CloudWatch** logging using per-run correlation IDs, an immutable audit trail, point-in-time recovery, and an **SQS dead-letter queue**; contributed to a **280+ test suite**.

Full Stack Software Engineering Intern — Jun 2025 – Dec 2025
Fidelity Investments — *Westlake, TX*

- Built a hybrid **semantic-lexical information retrieval** system using **AWS OpenSearch Serverless**, GPT-4o, FAISS, HNSW, and a Hugging Face reranker, boosting design speed for 500+ internal developers by 60%.
- Developed **3 AWS Lambda functions** in **Python**, automating data **ETL from RDS to S3** with complex **PostgreSQL** queries, embeddings with OpenAI, and hybrid search scoring, reducing manual search time by 80%.
- Created a **ReactJS frontend** on **S3** integrated with **API Gateway**, enabling 1,000+ architects to test searches while logging responses and feedback.
- **Automated AWS infrastructure** with **CloudFormation** and **Jenkins**, cutting deployment of IAM roles, Lambda, S3, OpenSearch, and EventBridge from days to under 1 hour.

Software Engineering Intern — Jun 2024 – Jul 2024
Investamark LLC — *Irving, TX*

- Fine-tuned a domain-specific language model on a synthetic dataset and implemented **RAG** over **10,000+ documents** using ChromaDB, OpenAIEmbeddings, and **LangChain**, reducing hallucinations by 90%.
- Deployed **local LLM inference** with **Ollama** and **Docker**, serving Phi-3 and Mistral behind a customized **Svelte** frontend.

President — Jan 2024 – Present
HackUTD, Association for Computing Machinery — *Richardson, TX*

- Led a **45-member team** organizing HackUTD, the **largest 24-hour collegiate hackathon** in North America: **1,200+ participants**, **15+ sponsors**, **$50K+ in prizes**.
- Directed engineering for **Jury**, an open-source judging platform adopted by **4+ hackathons nationwide**, and **HARP**, a hackathon operations platform.
- Competed in **12+ hackathons**; won HackTX, PennApps, TamuHacks, HackSMU, HackUTA, HackFin, HackUPC, and more.

Projects

Cambrian — Autonomous DeFi Agent Swarm | *Go, PostgreSQL, Redis, Solana, Base, LLMs, Docker*

- Built a **Go-based autonomous agent swarm** where agents run concurrent monitor, strategist, and heartbeat loops to optimize DeFi yield strategies across **Solana devnet** and **Base Sepolia**.
- Implemented **evolutionary agent mechanics** including mutation, crossover, LLM quality checks, adversarial bull/bear review, and budget-aware survival policies.
- Designed production infrastructure with **PostgreSQL migrations**, **Redis pub/sub**, REST and WebSocket APIs, AES-256-GCM encryption, and Docker.

Technical Skills

Languages: Python, Java, Go, TypeScript, JavaScript, C++, C, SQL, Rust, Dart
Cloud & Infrastructure: AWS (Lambda, ECS Fargate, DynamoDB, S3, RDS, SQS, EventBridge, API Gateway, OpenSearch, CDK, CloudFormation, KMS, IAM, CloudWatch), GCP, Azure, Docker, Kubernetes, Terraform, Jenkins, CI/CD, Ansible, Git, Unix/Linux
Backend & Data: PostgreSQL, MySQL, MongoDB, Redis, Apache Kafka, Flask, Node.js, REST, WebSockets, Distributed Systems
Frontend: React, Next.js, Svelte, React Native, Flutter
AI/ML: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, Apache Spark, Hugging Face, LangChain, LangGraph, RAG, Embeddings, FAISS, HNSW, Vector Search, Model Fine-Tuning, Ollama, Claude Code, GitHub Copilot
Certifications: AWS Certified Cloud Practitioner; Stanford Advanced Learning Algorithms & Unsupervised Learning