

# Yash Moar

M.S. SPECIALIZING IN MACHINE LEARNING SYSTEMS · FORMER SOFTWARE ENGINEER AT HSBC

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## Education

### Virginia Polytechnic Institute and State University (Virginia Tech)

Blacksburg, Virginia

M.S. IN COMPUTER ENGINEERING • GPA: 3.79/4.00

Aug. 2025 - May 2027

- **Coursework:** Advanced Machine Learning, Artificial Intelligence and Engineering Applications, Database Management Systems

### Vellore Institute of Technology, Vellore

Tamil Nadu, India

B.TECH. IN ELECTRONICS AND COMMUNICATION ENGINEERING | SPECIALIZATION IN BIOMEDICAL ENGINEERING

2018 - 2022

## Work Experience

### Virginia Tech

Blacksburg, Virginia

GRADUATE TEACHING ASSISTANT (SPRING '26) | GRADER (FALL '25)

Sep. 2025 - Present

- Engineered a **HITL** pipeline using **Google Gemini Vision API** to programmatically generate alt-text for technical diagrams, achieving **>90% accessibility** and reducing **10+ hours/week** of manual workload.
- Manage **instructional support** for **70+ students**, conducting weekly **office hours**, grading technical assessments, and collaborating with Dr. Virgilio Centeno to refine **ECE 3304 - Introduction to Power Systems and Power Electronics curriculum**.

### HSBC Technology

Pune, India

SOFTWARE ENGINEER

Aug. 2022 - Jul. 2025

- Developed and optimized microservices based web applications to **automate home loan document generation systems** for banking staff and customer operations across global markets.
- Architected an address component using **5+ Higher Order Components (HOCs)** in React, adaptable to 6+ regional requirements, reducing **redundant code by 20%** and cutting regional implementation time by 30%
- Increased code coverage by 20% while **resolving 900+ Sonar and Checkmarx vulnerabilities**, reducing code duplication by 35% and ensuring zero critical or major issues in production.
- Engineered CI/CD pipelines using **Jenkins and Terraform**, reducing deployment time by 40 minutes
- Implemented **Promises, Redux, and AJAX** to streamline application flow, enhance state management, and improve asynchronous data handling in scalable, high performance applications.
- Engineered centralized configuration management using **AWS S3**, enabling real time parameter adjustments and reducing **deployment rollback by 20%** by ensuring consistent environments across development, QA, and production.
- **Mentored** new team members and **redesigned their training curriculum**, resulting in a **40% reduction in onboarding time**.

## Key Projects

### Distributed Graph Streaming Platform

FASTAPI · NEXT.JS · REACT · NEO4J · DOCKER COMPOSE · SERVER-SENT EVENTS · TYPESCRIPT · PYDANTIC

Aug. 2025 - Present

- Engineered a high-concurrency FastAPI backend with Server-Sent Events to stream AI responses token-by-token, decoupling inference from the request cycle and cutting time-to-first-response from 5s to <100ms.
- Built an interactive graph visualization in Next.js using react-force-graph-2d with useMemo caching, preventing re-renders during high-frequency stream updates and rendering live retrieval paths for users.
- Containerized the full polyglot stack (Python, Node.js, Neo4j) via Docker Compose with strict network rules, volume persistence, and end-to-end type safety (Pydantic + TypeScript), achieving 99.9% deployment consistency.

### Distributed Real-Time Video Processing Pipeline

APACHE KAFKA · RAY SERVE · DOCKER · PROMETHEUS · GRAFANA · VLLM · PYTHON

Nov. 2025 - Present

- Designed a decoupled microservices pipeline using Apache Kafka and Ray Serve, separating I/O-bound video ingestion from GPU-intensive processing to achieve sub-50ms end-to-end latency.
- Deployed a high-throughput LLM inference service (vLLM) with PagedAttention, increasing processing throughput by 4x while eliminating GPU memory fragmentation under concurrent request batches.
- Built a non-blocking drift detection service using ResNet50 embeddings, exposing live data quality metrics via Prometheus and Grafana without impacting API response latency.

## Skills

### Languages

Python, JavaScript, Java, C++, Typescript, SQL, LaTeX, MATLAB

### AI/ML & Agent Systems

PyTorch, LangGraph, Neo4j (Graph/Vector), RAG Pipelines, OpenAI API, Hugging Face, Scikit-learn, Pandas, NumPy

### Full Stack Engineering

FastAPI, Next.js, React, Node.js, Server-Sent Events (SSE), REST APIs, React Force Graph, Tailwind CSS

### Cloud & Data Infra

AWS (SageMaker, Lambda, EC2), Apache Kafka, PostgreSQL, Docker, Kubernetes, Jenkins, CI/CD, Git, Linux

### Core Competencies

Data Structures & Algorithms, Object-Oriented Design (OOD), Database Design, Unit Testing, Agile Methodologies

## Certifications & Awards

2024 **PAT on the Back Award**, at HSBC for exceptional performance and achievements

2023 **Pioneer of the quarter Award**, at HSBC for codebase optimization and vulnerability remediation

2020 **Algorithmic Toolbox**  UC San Diego | Coursera