
EDUCATION

Master of Science, Computer Engineering

August 2024 - May 2026

Virginia Polytechnic Institute and State University

- Coursework: Networking, Network Security, Advanced Machine Learning, Computer Vision.

Bachelor of Technology, Computer Science and Engineering

December 2020 - May 2024

National Institute of Technology Karnataka (NITK)

EXPERIENCE

Graduate Assistant - IT Support, Virginia Tech

August 2025 - Current

- Configured and deployed Netgear switches, including VLAN setup, port configs, and firmware updates.
- Optimized IT infrastructure setup for staff, achieving **99.9%** system uptime and reducing downtime by **40%**.

Software Engineer Intern, Reliable Allies

May 2024 - July 2024

- Developed scalable React/TypeScript interfaces, achieving a **90%** satisfaction score in usability testing.
- Optimized frontend-backend communication via RESTful APIs, reducing latency by **30%**.
- Improved view performance by **30%** with GraphQL, React Query, API pagination, and caching.
- Built SQL + Pandas pipelines to analyze purchasing trends, boosting sales **15%** and repeat purchases **10%**.

Researcher - Reinforcement Learning, Indian Institute of Science

May 2023 - July 2023

- Designed multi-agent traffic control with Deep Q-Networks, improving simulated traffic flow **15%**.
 - Built a real-time SUMO traffic simulator with GPS data from **500+** vehicles, deployed for scalable testing.
 - Integrated Graph Neural Networks with PyTorch/TensorFlow for dynamic routing, reducing travel time **12%**.
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PROJECTS

Image Label Detection API with AWS (Flask + Rekognition)

July 2025

- Developed & deployed a Flask REST API for image uploads with AWS S3/Rekognition, secured via IAM roles and env-based credentials, and engineered for scalability with CI/CD readiness.
- Achieved **95% confidence** in detection results.

Emotion-Based Song Recommender

April 2025 - June 2025

- Built a full-stack React/Node.js app using music datasets and emotion modeling for personalized song picks.
- Designed a scalable backend API and deployed services to AWS.
- Integrated ML models (SBERT, Deep & Wide) as backend microservices without impacting response latency.

Assistive Navigation System

Sep 2024 - Dec 2024

- Engineered a real-time navigation assistant combining YOLO (object detection), BLIP (captioning), LLM interpretation, and TTS output.
- Deployed inference pipeline using PyTorch and OpenCV with optimized GPU utilization.
- Achieved **72%** real-world guidance accuracy in field tests.

Two-Stage Credit Scoring for Financial Data

January 2024 - May 2024

- Built scalable Spark pipelines to process standardized financial datasets for credit-scoring models.
 - Deployed model on AWS EC2 with LIME interpretability, optimizing for low-latency scoring.
 - Achieved **89.58% prediction accuracy**; presented at IEEE MysuruCon 2024.
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SKILLS

- **Languages:** Python, Golang, TypeScript, SQL, C++, JavaScript, HTML, CSS
- **Backend & Cloud:** AWS (Lambda, S3, EC2, Rekognition, CloudWatch, IAM), Flask, Node.js, GraphQL, Docker, Kubernetes, Terraform, boto3, NoSQL
- **Frontend:** React, Redux, HTML/CSS, TypeScript
- **DevOps & Tools:** Linux, Git, CI/CD, Postgres, JIRA, Matlab, Spring Boot
- **Data/ML:** PyTorch, TensorFlow, Scikit-learn, OpenCV, Pandas, NumPy, Matplotlib, Transformers