

Shravan Swaminathan

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EDUCATION

Master of Science, Data Science, Analytics and Engineering

Arizona State University

August 2024 – May 2026

Tempe, AZ

Relevant Coursework: Cloud Computing, Data Processing at Scale, Statistical Machine Learning, Data Mining, Optimization, Data Visualization, Probability and Random Processes, Information Assurance and Security, Machine Vision and Pattern Recognition.

Bachelor of Technology, Computer Science and Engineering

Hindustan Institute of Technology and Science

August 2020 – May 2024

Chennai, India

Relevant Coursework: OOPs, RDBMS, Data Structures, Operating Systems, Computer Networks, Artificial Intelligence

PROFESSIONAL EXPERIENCE

Research Intern

June 2025 – August 2025

TCS Innovation Labs IITM

Chennai, India

- Designed a priority-based aircraft landing system project by building a custom reinforcement learning environment in Python, modeling aircraft states, transitions, action spaces, ensuring stable and scalable system behavior under diverse operational scenarios across 1000+ simulated flight sequences.
- Initiated development of a domain-specific reward function and trained a Deep Q-Network agent, attaining stable policy convergence and adaptive landing prioritization with 20% better landing efficiency than baseline heuristics.
- Fine-tuned LLaMA 3.2 (11B & 90B) with Retrieval-Augmented Generation (RAG) to deliver domain-specific responses.

Software Developer Intern

January 2024 – July 2024

Intellect Design Arena

Chennai, India

- Developed the backend for a new financial management web app, designed to replace an older version as users found it slow.
- Boosted backend efficiency by refining APIs and database schemas, improving speed by 10% without reliability loss.
- Built scalable backend modules and streamlined RESTful APIs, minimizing average query latency by 28% and handling 25% more concurrent users.

Network Associate Intern

August 2022 – January 2023

Issquared Inc

Hyderabad, India (Remote)

- Diagnosed and resolved network connectivity issues by analyzing packet data and traffic patterns, improving network stability and reducing downtime by 15% across 30+ enterprise endpoints.
- Addressed hardware malfunctions through device replacements and firmware updates while conducting routine checks to maintain up time. Collaborated with senior engineers to establish security protocols and improve network performance.
- Executed and validated network configurations by running connectivity tests and troubleshooting deployment errors, ensuring smooth rollout of 20+ routers and switches across 5 client sites.

PROJECT EXPERIENCE

Hybrid Framework for MRI-to-CT Translation for Medical Imaging Applications

February 2025 – May 2025

- Built a deep learning pipeline combining latent diffusion models, Swin Transformers, and Bayesian uncertainty quantification (Monte Carlo Dropout, Gaussian Processes, Conformal Prediction) to generate synthetic CT scans with enhanced anatomical fidelity and clinically interpretable reliability for radiation oncology planning.

Scalable Face Recognition Application on AWS Cloud and Edge Infrastructure

February 2025 – May 2025

- Designed a fault-tolerant serverless pipeline using AWS Lambda, IoT Greengrass, and ECR with MTCNN + FaceNet for real-time video processing, integrating SQS messaging and EC2-emulated IoT devices to enable low-latency, fault-tolerant edge-cloud scalability.

Time-Series Forecasting with Multi-Layer Perceptron (MLP)

September 2024 – December 2024

- Developed an MLP with two hidden layers and ReLU activations, trained using Adam optimizer and MSE loss, validated with train/validation/test splits, and delivered a prediction error of 0.00209 MSE, demonstrating high forecasting accuracy.

SKILLS

Programming Languages: C, C++, C#, Python, SQL, Java

Web: HTML, CSS, JavaScript, TypeScript, PHP, Node.js, React.js

Databases: MySQL, PostgreSQL, MongoDB

Tools and Cloud: AWS, Linux, Git, OpenCV, TensorFlow, Scikit-learn, PyTorch

LEADERSHIP AND AWARDS

- Earned “Best Intern of the Month” award at Intellect Design Arena (2024) by securing 1st place in a Java coding competition through implementing algorithms with the best time complexity.
- Dedicated Karate practitioner and holder of a Black Belt.
- Led the soccer team as captain in both school and college.