

Sreeram Melpadi

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Education

State University of New York At Buffalo, Buffalo, NY, USA
M.S. in Computer Science (AI/ML Specialization)

Aug 2024 - Dec 2025
GPA: 4.0 / 4.0

The National Institute of Engineering, Mysuru, KA, India
B.E. in Electronics and Communication Engineering

Aug 2017 - June 2021
GPA: 8.73 / 10

Work Experience

Sandvine, Bangalore

Feb 2021 - July 2024

Senior Software Engineer (R&D)

Dec 2023 - July 2024

- Worked **on-site** in Australia for 40 days as the team's **SME**, leading a production deployment at **NBN Co**, Australia's largest network provider, ensuring better network QoE for **hundreds of thousands of subscribers** and retained a \$1M deal.
- Led** the design, architecture, and development of a full-stack Web app with **Django** (Backend), **ReactJS** (Frontend), and **Vertica** (DB) to visualize subscriber and network locations' QoE, providing real-time insights for improved network performance.

Software Development Engineer (R&D)

Jul 2021 - Nov 2023

- Performed **bulk data analysis** on millions of subscribers' network packet meta-data like bandwidth, round-trip time, and packet loss to understand, analyze, and find potential areas of QoE improvement. (*Python, Pandas, Numpy*)
- Enhanced the disaster recovery by implementing Active-Active High Availability and Active-Passive Geo Redundancy by **containerizing** and clustering servers while **load-balancing** across the data centers with an **RTO of 4 minutes**. (*Docker, Consul*)
- Designed and developed efficient asynchronous RESTful APIs for **microservices-based** containers, enabling horizontal scaling of processing nodes thereby increasing request handling rate by **64%**. (*Python, Linux*)
- Optimized throughput performance of Congestion Management product by **850%** using efficient algorithms and design and reducing redundancy over the product pipeline after profiling and analyzing expensive method calls using **cProfile** and **py-spy**.

Software Engineer Intern

Feb 2021 - June 2021

- Optimized configuration management by migrating from a YAML-based program to **ConfD** (CLI) and **NETCONF**, accelerating configuration speed by **300%** and enhancing functionality with dynamic validations and structured data models.
- Incorporated efficient **SQL** transformative queries to boost the performance of the Database operations by 40%. (*Vertica, SQL*)

Projects

TheraPT: Empathetic Dialogue Generation using Transformer-based Conversational Agent With Reasoning

Apr, 2025

- Developed a mental health-focused **conversational agent** by fine-tuning **GPT-2** on counseling datasets along with **BART**-based context compression to summarize prior user interactions and enable long-range coherence. Integrated **chain-of-thought** prompting to induce reasoning. Achieved strong semantic alignment with human responses (**BERTScore F1: 0.8948**).

MazeNav: Maze Exploration with Sparse Rewards using N-Step Double Q-Learning

Dec, 2024

- Trained a **reinforcement learning** agent using **N-Step Double Q-Learning** in **PyTorch** to navigate a custom maze environment with sparse rewards, achieving 86% success rate after 1,000 episodes. Implemented environment from scratch (by inheriting OpenAI Gym Environment) and visualized learning progression through animated path traces and Q-value heatmaps.

Face Mask Detection, Recognition, and Attendance System

May, 2021

- Developed a face mask detection and (face) recognition system using live-feed from **Raspberry Pi**, marking attendance with mask status in a remote database. Trained a **CNN** model on **GPU** with 89% accuracy using **TensorFlow/Keras**, scraped images with **Beautiful Soup**, and OpenCV for human detection. Deployed the system on **Cloud** using **AWS EC2**, **RDS** (MySQL) and **Flask**.

Skills

Languages: Python, C/C++, SQL, Bash, JavaScript, R

Frameworks: PyTorch, Tensorflow, Keras, ReactJS, Django, Flask

Cloud & Infrastructure: AWS, EC2, RDS, Docker, Kubernetes

Database: MySQL, MongoDB, Vertica

Data Science & Analytics: Pandas, Numpy, Matplotlib, Kaggle, Hugging Face

Technologies & Tools: Linux, Git, CI/CD, Consul, CUDA, Excel, MicroStrategy, Kaggle, Apache Spark, OpenSSL

Soft Skills & Methodologies: Quick Learning, Problem-Solving, Leadership, Critical Thinking, Adaptability, Agile (Scrum)