NAVIN KUMAR M

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EDUCATION

B.Tech in Computer Science & Engineering, Artificial Intelligence & Machine Learning Specialization, Vellore Institute of Technology, Chennai
Cum.GPA : 8.8 Expected 2024

Relevant Coursework:
Machine Learning, Deep Learning, Data Structures & Algorithms, Operating System, Business Intelligence, Malware & Security Intelligence, Computer Networks, Database Management, Applied Linear Algebra, Statistics, Engineering Calculus & Software Engineering.

EXPERIENCE

Deep Learning Engineer, Remote Intern Dec 2022 - Feb 2023
Omega Plus Technologies *San Francisco, CA*

- Built a **Real-time Face Detection and Recognition System** for crowd surveillance using **yolov7, Kalman Filter, ESPCNv2 GAN** and containerized with **Nvidia-Docker**.
- Optimized for real-time inference with **TensorRT** and deployed as an API service in the cloud.

PROJECTS

AI Malware System

- Developed a **cross-platform antivirus app** with an AI-powered backend for **malware detection** and analysis on **Azure**.
- Pretrained **CoAtNet** on *1.5 Million Malware Image Dataset* achieving benchmark, **LightGBM**, and **LSTM** models for feature analysis and developed the frontend with **TypeScript** and **Rust**.
- **Web App** backend with **Node.js** on **AWS Cloud** for the web app backend and visualized insights with **Azure Databricks** and **PowerBI**.

Crime Anomaly & Activity Detection

- Deployed a **WebSocket API endpoint** for camera communication and anomaly detection using *video sequence analysis*.
- Pretrained **EfficientNetv2M**, **SwinTransformer**, and **CoATNet** as **AutoEncoders** on the *UCF-Crime Dataset*. Classified anomalies using **One Class SVM** and increased accuracy with an **LSTM Decoder model**.
- Implemented a **Face Recognition Mechanism** to detect the faces of victims and attackers.

Parallel & Distributed System Workspace

- **No Code Lab Setup** and Model Training Environment Documented for reproducibility.
- As the head of the Distributed System team, developed a solution to parallelize the processing of General Circulation Model and Deep Learning Model training and inference by distributing the workload across GPUs in a **Ray cluster**.

SKILLS

- Frameworks: PyTorch, Tensorflow, AWS, MLFlow, Ray, Tauri
- Languages: Python, TypeScript, C++, Rust, Node.js, MongoDB, MySQL, Tailwind CSS
- AI & ML Expertise: Computer Vision, NLP, Generative Models, LightGBM, SVM
- Soft Skills: Strong leadership and Real World Problem Solving, passionate and hardworking attitude, excellent team coordination and collaboration abilities