

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 : 8.86

Expected 2024

Relevant Coursework:

Machine Learning, Deep Learning, Data Structures, Algorithms, Operating Systems, Business Intelligence, Security, Networks, Databases, Linear Algebra, Statistics, Software Engineering.

EXPERIENCE

Machine Learning Engineer

May-July 2023

Gutsy Innovation

Bangalore, India

- Developed a **Real-time Face Detection and Recognition System** for crowd surveillance using **yolov7**, **Kalman Filter**, **ESPCNv2** GAN.
- Implemented containerization using **NVIDIA-Docker** with **TensorRT** support and **gRPC** communication.

PROJECTS

AI Malware System

(Blog) (Authoring)

- Engineered a **cross-platform antivirus application** with an **AI-driven backend** for malware detection and analysis, hosted on **AWS**.
- Pre-Trained **CoAtNet** models on two **1M Malware Image Binary Datasets** and utilized **LightGBM** and **LSTM** for static and dynamic feature analysis, and implemented the frontend using **TypeScript** and **Rust**.
- Established an **ETL pipeline** on **Azure Databricks** and generated visual insights using **PowerBI**.

Anomalous Crime Activity Detection

- Built a **WebSocket API endpoint** for real-time video-streaming communication and anomaly detection using Video Sequence Analysis.
- Pretrained **Swin & CoAtNet Vision Transformer** as **AutoEncoders** on the UCF-Crime Dataset with anomaly classification via **SVM** and an **LSTM Decoder** model for enhanced accuracy.

Chart Derendering - Visual Reasoning

- Visual Reasoning from charts and plots to make them accessible for Visually Impaired People
- Developed **EfficientNetv2**, **Matcha (Pix2Struct) Multi Modal Transformer**, and **Faster RCNN** for comprehensive **Chart Derendering**.

Parallel & Distributed System Workspace

(Documentation)

- Devised a solution to parallelize the processing of **General Circulation Model**
- Built **No Code Lab Setup** for **Model Training & Serving** across GPUs in **Ray cluster**.

SKILLS

- Frameworks: PyTorch, Ray, AWS Cloud, Tensorflow, MLFlow, Tauri, RAPIDS, Node.js
- Languages: Python, Rust, MySQL, C++, TypeScript, MongoDB
- Technical Expertise: Computer Vision, Natural Language Processing, Tabular & Timeseries Data Modelling
- Soft Skills: Strong leadership and Real World Problem Solving, Passionate and Hardworking attitude.

ACHIEVEMENTS

- Finalist in the HackKnight Blockchain Hackathon conducted by Hack Club VIT Chennai.
- Scored 98.92%ile on JEE-Mains 2020
- **Certifications:** AWS Certified Developer Associate (Udemy), TensorFlow Developer (Udemy), Machine Learning (Udemy), MLOPS Specialization (Coursera)