Nishanth C

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LinkedIn | **Personal Website**

Dynamic and innovative ML engineer with extensive experience in machine learning and artificial intelligence. Proven track record in technical leadership and developing cutting-edge solutions in AI, ML/DL, and data science. Inventor with several patents in driver assistance, collision detection, and drowsy driving detection systems. Passionate about leveraging technology to solve real-world problems and drive impactful change.

EXPERIENCE

Netradyne, Bengaluru — *Staff Machine Learning Engineer*

July 2021 - PRESENT

Staff Machine Learning Engineer:

- Currently working on distilling SigCLIP onto a custom inhouse model to run on edge for distributed video search/ understanding.
- Matryoshka representation learning (MRL) for reducing the joint embedding representation size of imagery and text thereby scaling to multimillion videos in the system.
- Evaluating fine tuning of LLMs to use custom image embedding for DashCam risk assessment and avoidance suggestion predictions.
- In addition to working on and delivering key product features I am also a technical lead (8 member team) and a manager (4 direct reportees).

Senior Machine Learning Engineer:

- Positive reinforcement cloud framework for drivers called driver streaks - New feature responsible for awarding streaks to users on aggregated positive driving behavior. Streaks are negatively correlated to accidents.
- LLMs - Used RAG with internal help documents to solve user feature discoverability issues. Increased assistant usage up to 5%.
- Live DB data access to LLMs, Dynamic chart creation for users to analysis big data quickly usage increase to 8-10%.

Machine Learning Engineer:

- Spearheaded the development of collision detection systems on edge devices, Model precision increased to 91% from 60% on HighG detection.
- LowG collision detection - brought the models up to 79% precision from single digit precision prior.

Centre of Excellence in Wireless Technology, IIT Madras — *5G Project Engineer*

Till July 2019

Contributed to the development of the 5G Core Network, enhancing network reliability and performance.

EDUCATION

Indian Institute of Science, Bengaluru — *M.Mgt (Business analytics)*

2019 - 2021

A sort after course at IISc, which helps students specialize in Data science, machine learning, data mining, deep learning, Statistics, probability and business concepts.

Technical Skills

Machine Learning: CNNs, RNNs, Transformers, LSTMs

Deep Learning: PyTorch, ONNX, Sklearn

AI Technologies: CLIP, Stable Diffusion, LLMs

Data Tools: AWS, Spark, Mixpanel

Programming Languages: Python, SQL

Professional Skills

Technical Leadership

Project Management

Scrum Master

Team Collaboration

End–to–End Project Delivery

Patents

SYSTEMS AND METHODS FOR COLLISION DETECTION AND CLASSIFICATION

VIDEO-BASED DROWSY DRIVING DETECTION ON AN EDGE DEVICE

- US Application No. 63/446,368 ·
- Filed Feb 17, 2023

DRIVER ASSIST

- US Application no. 63/458,064 ·
- Filed Apr 7, 2023ANT LANGUAGE MODEL

NATURAL LANGUAGE SAFETY MANAGER ASSISTANT

- Indian Patent Application no. 202411035178
- Filed May 3rd 2024

SRM Institute of Science & Technology, Chennai — *B.Tech. (ECE)*

2014 - 2018

Specialized in electronics and communication, key interests were surrounding wireless communication technologies.

English, Tamil, Hindi

PROJECTS

Distributed video search

Working on CLIP representation learning by distilling SigLIP onto custom edge models, Using MRL to reduce the representation space and further will use these embeddings for risk assessment in dashcam footage.

Collision detection on Edge

Feature engineering with FFT, CWT, and first and second order derivative based features on IMU (Accelerometer and Gyro data) and GPS data. Models based on CNNs, Boosted trees.

Driver streaks

Positive reinforcement for drivers for accumulating continuous positive driving behavior e.g. Speeding, distracted driving, stop sign compliance and following distance – Cloud architecture to handle reprocessing, correction and grant post confirmation features.

LLM based assistant

Capabilities to read from help articles, live DB data and trigger actions based on users requests

CLIP based video cataloging and summarisation.

Video search via text also key point derivation based on query.