Harshith Mohan Kumar

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EDUCATION

University of California, Riverside — Riverside, CA
Master of Science, Computer Science — Expected May 2025

PES University — Bangalore, KA
Bachelor of Technology, Computer Science — Aug 2019 - Jul 2023
Specialization in Machine Intelligence and Data Science; Graduated First Class with Distinction

WORK EXPERIENCE

INTEL — Bangalore, India
Machine Learning Intern — Jun 2023 – Jul 2023

- Designed novel semi-supervised learning framework for advanced driver-assistance systems (ADAS) to automate object detection labeling. Resulted in 20% improvement in accuracy and research paper acceptance at ICCV 2023 workshop.
- Developed proof of concept to grade severity of ADAS collision avoidance alerts enhancing fleet manager decision-making.

GOOGLE SUMMER OF CODE (RED HEN LAB) — Remote
Contributor — Jun 2022 – Sep 2022

- Automated segmentation of old TV Broadcast recordings using multi-modal deep learning. Enabled 15x efficiency through multi-threading and array jobs on a largescale HPC GPU cluster.
- Conducted music segmentation, image segmentation, and RNN-DBSCAN clustering on 100+ TB data.

INDIAN INSTITUTE OF SCIENCE — Bangalore, KA
Summer Research Fellowship — May 2021 – Jul 2021

- Researched Markov Chain-based stochastic models to reduce 802.11 WiFi router packet collisions, enhancing throughput. Verified results through NetSim and QualNet simulations.

VOLUNTEERING

TensorFlow User Group (Bangalore) — Bangalore, KA
Organizer — Aug 2023 – Present

- Managed event communication and sponsorship, facilitating valuable industry connections.

PES University — Bangalore, KA
Teaching Assistant — Jun 2022 – Jul 2023

- Created course slides, practical python workbooks and automated labs for the Data Analytics and Image Processing and Computer Vision courses. Improved understanding of recommender systems and morphological processing for students.

Subject Matter Expert — May 2021 – Jul 2021

- Developed and taught four-week curriculum for the course '*Introduction to Machine Learning*' and held a two-day workshop on '*Neural Networks from Scratch*' for 100 undergraduate students to encourage practical learning.

PUBLICATIONS

1. OCTraN: 3D Occupancy Convolutional Transformer Network in Unstructured Traffic Scenarios — *CVPR Workshop 2023*
2. Fusing Pseudo Labels with Weak Supervision for Dynamic Traffic Scenarios — *ICCV Workshop 2023*
3. GraphCoReg: Co-Training for Regression on Temporal Graphs — *ECML-PKDD Workshop 2022*
4. Multivariate Covid-19 Forecasting with Vaccination as a factor: the case of India & USA — *ICML Workshop* & *IEEE 2022*
5. Semi-Supervised Learning with In-domain Pre-training and Deep Co-Training — *ICICCT Springer 2023*
6. Classification of Recyclable Waste Generated in Indian Households — WORLDS4 *Springer 2021*

SKILLS

Languages: Python (Advanced), C, Java (Proficient)
Backend: Docker, CGP, AWS, GitHub, MongoDB
Systems: Linux (Advanced), HPC, CUDA

ML/Stats: PyTorch, Pandas, Numpy, TensorFlow, Keras, OpenCV, Scikit-learn, Matplotlib
Research: Depth perception, Object detection, Image Segmentation, Recommender systems, Text summarization