Ahmad Chalhoub

Detroit, United States, 313-652-6093, aachalho@umich.edu

LINKS

Mitsubishi Electric's HubPilot Project, Research Paper Implementations

PROFILE

Driven Perception Engineer leading advanced 3D sensor fusion and real-time deep learning initiatives for Mitsubishi Electric's HubPilot project, while pursuing a Master's in Computer Science and Engineering at the University of Michigan, Ann Arbor.

EMPLOYMENT HISTORY

Sep 2024 — Present

Automotive Perception Engineer III, Mitsubishi Electric Automotive America (MEAA)

Northville, MI

- Lead the end-to-end development, integration, and testing of HubPilot's on-board vehicle perception system (HubDrive), surpassing demanding accuracy requirements.
- Research, prototype, and develop advanced 3D perception models, emphasizing sensor fusion approaches.
- Solely designed, developed, deployed, and tested HubPilot's YardPass feature.
- Plan and manage data collection and labeling pipelines for model training.
- Optimize deep learning models and perception software for NVIDIA embedded SoCs.
- Collaborate with cross-functional engineering teams in Japan and research scientists at MERL (Mitsubishi Electric Research Labs) for various development efforts.

Jan 2022 — Sep 2024

Automotive Perception Engineer II, MEAA

Northville, MI

- Spearheaded the design and development of HubPilot's HubDrive system from concept to initial deployment, ensuring robust architecture and on-schedule delivery.
- Orchestrated end-to-end data collection and labeling efforts for multiple RGB camera deep learning models, guaranteeing high-quality datasets for model accuracy.
- Supported the deployment of deep learning perception pipelines across various ADAS vision use cases.
- Developed comprehensive flow diagrams detailing the entire perception system design.
- Translated overall system and customer requirements into multi-level perception specifications.

May 2021 — Dec 2021

Machine Learning Research Intern, MEAA

Northville, MI

- Led MEAA's first in-house High-Performance Compute (HPC) machine build, enabling efficient on-site data processing.
- Partnered with research scientists at MERL to refine model development and deployment processes.
- Developed and optimized a deep learning vision solution for Qualcomm's SoC (showcased at CES) using the Qualcomm Neural Processing SDK.
- Authored the first end-to-end documentation for MEAA's deep learning development process, now adopted across R&D teams as a standard reference.

May 2020 — Dec 2020

Machine Learning Researcher, University of Detroit Mercy

Detroit, MI

- Studied the main mathematical concepts involved in Machine Learning models.
- Built simple CNN models for image classification.

EDUCATION

Aug 2024 — Present

MEng in Computer Science & Engineering, University of Michigan

Ann Arbor

- Advanced Topics in Computer Vision

Aug 2017 — Dec 2021

BE in Robotics, University of Detroit Mercy

Detroit

SKILLS

- Machine Learning
- PyTorch
- 3D Computer Vision
- Research & Prototyping
- Python & C++
- Embedded Systems Optimization
- Git
- Linux
- Leadership
- Time Management