Devesh **Walawalkar**

Computer Vision Researcher & Engineer

4140 Grand View Blvd, Apt 21, Los Angeles, CA, USA

devwalkar64@gmail.com | www.devwalkar.info | devesh-walawalkar-376a87a4 | Devesh Walawalkar

Summary

Avid **Computer Vision Researcher and Engineer** with over **7 years of experience** building and scaling AI tech for a variety of company scales ranging from stealth startups to big tech companies. Has a very diverse skill set that ranges from conducting fundamental AI research, including publishing at world-top AI conferences to development and deployment of state-of-the-art computer vision tech into real-world products. Strong **undergraduate background in hardware** and **graduate AI research experience** facilitate his critical contribution to all areas of a AI based product's research-to-deployment cycle.

Work Experience

Flawless AI

Los Angeles, CA, USA

AI Research Engineer

Aug. 2022 - Sept. 2025

- Conducted research and deployment of movie character facial analysis tech as part of the core founding team. This included building scalable R&D frameworks from zero for modules such as Detection, Identification, Motion tracking, Landmarks and Segmentation of character faces.
- Developed a fully automated and scalable labeling pipeline for face parsing, including facial occlusions and beard. This involved the use of foundational models such as SAM2.1 and Radiov3, with a bootstrapping mechanism using initial coarse labels.
- Devised an efficient data sampling algorithm for finetuning a generic Neural Rendering model on character specific videos/shots, a core part of the company's visual dubbing product tech.
- Led winning teams at 3 major internal hackathons aimed at prototyping innovative movie AI product tech.
- Mentored research interns for various facial analysis research projects, with majority being deployed in the product.

Honeywell

Pittsburgh, PA, USA

Advanced Computer Vision Researcher

Jan. 2020 - July. 2022

- Developed core AI based robotics perception tech for warehouse process automation focused systems, including robotic arm based depalletization, smart sortation system among others.
- Researched on simulation software based synthetic data capture for generalizing a AI based 3D package segmentation model to perform accurately with any random package design, shape and placement alignment.
- Facilitated distribution of AI specialty knowledge throughout the organization in form of seminars, demos and research talks.
- Deployed large AI perception models on resource constrained devices available on Nvidia Jetson and Qualcomm platforms.

Biometrics Lab, Carnegie Mellon University

Pittsburgh, PA, USA

Computer Vision Research Lead

June. 2018 - Dec. 2020

- Led a team of Deep learning researchers to create a proprietary iOS application on driver drowsiness detection for PwC Ltd. This included implementation of face detection, face landmarking, face pose estimation, human eye and mouth closure detection, all within a single application using just the iphone's processing capacity.
- Conceptualized and managed the creation of a proprietary dataset having more than 300 subjects (as part of CMU research study) to train Deep Learning models for Human sleepy face detection.
- Led research projects for US Department of Defense, focused on innovative AI model compression and deployment tech on AV drones.

Education

Carnegie Mellon University

Pittsburgh, PA, USA

M.S. in Electrical and Computer Engineering

Jan. 2018 - May. 2019

- Focus on Machine Learning, Artificial Intelligence, Computer Vision and Robotics department courses

Select Publications

- **First Author** - "Online Ensemble Model Compression using Knowledge Distillation." In ***ECCV 2020*** (Paper link)
- **First Author** - "VideoClusterNet: Self-supervised and Adaptive Face Clustering for Videos." In ***ECCV 2024***. (Paper link)
- **Best Paper Award** - "Medal: Accurate and Robust Deep Active learning for Medical Image Analysis." In ***ICMLA 2018*** (Paper link)
- **Granted US Patent** - Method for compressing an AI based Object Detection Model for deployment on resource limited devices (link)

Skills

- **Research** for Computer Vision tasks including image analysis and generation, notably Facial Analysis (Detection, Identification, Landmarks), Semantic Segmentation, Generative Video Editing, Active Learning, Medical Image Analysis
- **Efficient Deployment** of Computer Vision tech for diverse domains including Robotics Perception, Movie/TV content, Video Surveillance etc.
- **Software Stack**: Python3, Pytorch, Numpy, Tensorflow, OpenCV, Apple CoreML, Git, HDF5 Database Management