Heiru Wu

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Skills

Programming languages:	Proficient in Python, Previously used Java, C++
Tools:	Pytorch, TensorRT, XGBoost, scikit-learn, OpenCV, Git, Luigi, AWS, Android

Experience

Aegis Technology — Phoenix, AZ, USA
Founding Senior Engineer — Mar 2022 - Present

- Designed PoC Machine Learning solution which combines optical flow feature characterization and color-based image classification DNN model for fire hazard detection in large scale semiconductor fabrication plant.
- Deployed on complex infrastructure with High Availability virtual machines migration system to acheive the ability to inference 200+ real-time video streams with 0 downtime.

Careplus.ai — Hsinchu, Taiwan
Chief Technology Officer — Feb 2021 - May 2022

- Designed and developed a Machine Learning enabled home-caring system which introduced intelligent ambient awareness powered by our modularized inference components, delivering features that prevents 90% or more of the accidents and continuously adapting to current environment and new behaviors.
- Developed custom MLOps framework for automation pipeline to perform self-annotation, active-learning, performance evaluation and model deployment to achieve continous learning and cut down 90% of the human resources and maintain 99% of system availability and reliability.

Prof. Min Sun, Tsing Hua University — Hsinchu, Taiwan
Research Assistant — July 2020 - Feb 2021

- Researched and developed modularized Machine Learning inference components including object detection, object tracking, pose-estimation, action-recognition and person re-identification, which can speed up task-specific domain adaptation up to 80% and cut down 50% of development time.

Industrial Technology Research Institute — Hsinchu, Taiwan
Software Engineer — July 2019 - July 2020

- Customized SOTA deep learning backbone networks including Mobilenet, Darknet-53 and CSPNet, combined with SSD and Yolov3/v4 detection network and object tracking algorithms, deployed an object detection system for self-driving vehicles with above 90% intra-class averaged mAP and f1 score.

Prof. Sanjib Sur, University of South Carolina — Columbia, SC, USA
Research Assistant — Sep 2018 - May 2019

- Researched and designed a DNN steering angle prediction model built with Tensorflow framework, we introduced novel convolutional blocks to learn and extract additional high dimensional features with 20% faster model forward time and 10% higher mAP over benchmark dataset.

California Partners for Advanced Transportation Technology — Richmond, CA, USA
Research Intern — June 2018 - Sep 2018

- Developed tools to help construct 3D pointcloud vector map for autonomous vehicle's SLAM algorithm and route planning while utilizing PPP GPS to correct the margin of error to achieve 90% accuracy.

Industrial Technology Research Institute — Hsinchu, Taiwan
Software Engineer — Feb 2017 - Aug 2017

- Designed algorithms to utilize single Kinect camera for 3D human model reconstruction and contour detection for 2D-to-3D scaling estimation, process 3 times faster than conventional system.

Education

University of South Carolina — Columbia, SC, USA
M.Sc. Software Engineering *GPA: 3.9* — Aug 2017 - May 2019

Chang Gung Unversity — Taoyuan, Taiwan
B.Sc. Electrical Engineering *GPA: 3.4* — Sep 2011 - Jan 2016