

# Heiru Wu

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## Skills

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**Programming languages:** Proficient in Python, Previously used Java, C++

**Tools:** Pytorch, TensorRT, XGBoost, scikit-learn, OpenCV, Git, Luigi, AWS, Android

## Experience

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### Aegis Technology

Phoenix, AZ, USA

FOUNDING ENGINEER

Mar 2022 – Present

- Research and design machine learning solutions from scratch for fire hazard detection in large scale semiconductor fabrication plant.
- Quickly deploy pytorch PoC system in short timeframe in response to changing requirements, and verify the validity of the solutions.

### 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

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### University of South Carolina

Columbia, SC, USA

M.Sc. IN SOFTWARE ENGINEERING

Aug 2017 – May 2019

GPA: 3.9

### Chang Gung University

Taoyuan, Taiwan

B.Sc. IN ELECTRICAL ENGINEERING

Sep 2011 – Jan 2016

GPA: 3.4