

KUAN-HUNG CHEN

khchen.me@gmail.com | <https://khchen.me> | github.com/kuanhungchen

EDUCATION

National Tsing Hua University, Hsinchu, Taiwan

M.S. in Electrical Engineering

Sep 2020 – Present

- Advisor: Prof. Min Sun

B.S. in Electrical Engineering (3.9/4.3)

Sep 2017 – Jun 2020

- Thesis: Anchor-Based Tiny Object Detection in Aerial Images
- Transferred from Computer Science, National Central University (Sep 2016 – Jun 2017)

EXPERIENCE

CarePLUS.ai, Hsinchu, Taiwan

Student Researcher

Mar 2020 – Present

- Built a pipeline that monitors data changes and automatically retrains, reevaluates and reuploads AI model
- Proposed an algorithm that detects and monitors people entering and exiting events in bird's eye view
- Improved an algorithm that efficiently selects hard examples which are wrongly predicted by detector
- Proposed several methods to visualize privacy-preserving images which ease the workflow of annotation
- Maintained an OTA service written in Python and shell script that can automatically reconnect if disconnected
- Wrote scripts in Python with Google Cloud Platform API that synchronize data between cloud and local storage

Edony A.I., Taipei, Taiwan

Software Engineering Intern

Aug 2019 – Feb 2020

- Designed and implemented a vision-based system that tracks level of liquids, achieved a tolerance of 2 millimeters
- Deployed the system on NVIDIA Jetson Nano, shortened the operating time to 5 – 7 seconds per movement

National Tsing Hua University Vision Science Lab, Hsinchu, Taiwan

Undergraduate Research Student

Jun 2018 – Jun 2019

- Worked on tiny object detection in aerial images, revised RetinaNet by adding Pyramid Pooling Module
- Worked on multimodal human action prediction, fused with synthetic data to improve the performance by 3%

SELECTED PROJECTS

Awesome Tiny Object Detection (bit.ly/tiny-object)

Mar 2019 – Present

- Curated a list of awesome papers, datasets, surveys and articles for tiny object/face/pedestrian detection
- Starred by 450+ and forked by 90+ GitHub users worldwide

Remove the People: Segmentation-Based Object Removal (bit.ly/dsp-report)

May 2020 – Jun 2020

- Implemented a two-stage method that removes target object in images by modified seam carving algorithm
- Proposed a method that automatically generates object mask by segmentation and filter-based energy map

Simple Compiler Design and Implementation (bit.ly/simple-compiler)

Feb 2020 – Jun 2020

- Implemented a small compiler which targets on subset of C language and generates RISC-V assembly code
- Uploaded and executed the generated assembly code on Andes Corvette-F1 board, which blinks the LED

Multi-Threading Package (bit.ly/simple-thread)

Oct 2019 – Jan 2020

- Implemented a simple OS multi-threading package in C language which targets at Edsim51 simulator
- Implemented mechanism and test cases of thread creation, cooperative/preemptive switching and termination

PATENTS

Measuring device (patent: bit.ly/edonyai-patent, demo: youtu.be/8rQdvW4X5xE)

Mar 2020

- An edge device that tracks level of fluid in factories. Work done during the internship at Edony A.I.

SKILLS

Programming: Python, C++, Shell (Bash)

Software: Git, Linux, Vim

Languages: Mandarin (native), English (conversational), Korean (beginner)