YU-CHING HSU (RUBY)

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EXPERIENCE

Logitech Inc.
July 2018 – Sep 2018

Imaging Engineer Intern — C/C++

- Developed Logitech's internal analysis tool for image quality team to better control auto focus, auto white balance, auto exposure.
- Achieved real-time manipulation in video between hardware control and software visualization.
- Researched and developed computer vision algorithms centered around the human face detection in collaboration with CVLab, YZU.

EDUCATION

University of Utah
Aug 2019 – June 2021

M.S. in Computer Science — GPA:3.23/4.0

- Advanced Algorithms

Yuan Ze University
Aug 2018 – June 2019

M.S. in Electrical Engineering — GPA:4.0/4.0

- Neural Network, Machine Learning

Yuan Ze University
Aug 2014 – June 2018

B.S. in Electrical Engineering — GPA:3.77/4.0

- Data Structure, Computer Architecture, Micro-computer System

PUBLICATIONS

Conference and Book Chapters

- "Button Segmentation from an Elevator Inside Door Image", IMECS 2018, Springer TET 2018
- "Effective and efficient baseline correction algorithm for Raman spectra", IMECS 2019
- "Automatic Elevator Button Recognition with CNN Feedback System Enhancement", Master thesis in 2019

Competitions

- Placed in top 1% in "Unmanned Store" MATLAB Deep Learning Competition 2019, Terasolf Inc.
- Placed in 3-rd in Solar Photoelectric Design Competition 2016

PROJECTS

Paired Face Detection for Multi-Camera

C/C++ | Python | OpenCV | Pytorch

- Developed an algorithm based on Resnet to identify the same person in multiple cameras to track people or make combining scene.
- Improved the accuracy by including the upper body information and adjusting calibration between different cameras.

Auto Recognition for Elevator Button with CNN

Python | OpenCV

- Developed the elevator button recognition algorithm for robot to control the elevator directly.
- Improved the auto localization algorithm accuracy to 95.8% and recognition algorithm accuracy to 99.9%.
- Reduced the effect of illumination and reflection by edge detection, morphology, and projection.

Auto Recognition for Unmanned Store with Faster R-CNN

Matlab | OpenCV

- Placed in top 1% in MATLAB Deep Learning Competition 2019, Terasoft Inc.
- Improved accuracy to 68% by connected component for small dataset - total 6k images with multiple objects per scene and final 105 classes.

Coreference Extraction for NLP

Python | Keras | Tensorflow | Linux

- Developed a coreference solution with semantic match to extract same entities in documents.
- Improved accuracy by 100% by removing pleonastic "it" pronoun.

Missing Migrants Data Visualization

Javascript | HTML | D3

- Designed an interactive website to provide safer migration suggestion by visualizing routes.
- Processed 17k dataset.