YU-CHING HSU

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EXPERIENCE

Logitech Inc.
July 2018 – Sep 2018

Imaging Engineer Intern   `C/C++` `MFC` `Git`

- 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

Master of Science in Computer Science   GPA:3.62/4.0

- Advanced Algorithms, Info Retrieval, Data Mining

Yuan Ze University
Aug 2018 – June 2019

Master of Science 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

SKILLS

`Git` `Python, C/C++, Java, Javascript, AngularJS, Matlab`
`Keras, Tensorflow, Pytorch, D3, MFC` `Linux, Windows`

PROJECTS

Auto Recognition for Elevator Button with CNN

`Python` `C/C++` `OpenCV` `Pytorch`

- 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` `CSS` `D3`

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

Information Retrieval on Recommendation System

`Java` `Galago`

- Integrated latent factor model with both like and dislike reasons in item characteristic analysis.
- Introduced the key text factor for explanation.

Paired Face Detection for Multi-Camera

`C/C++` `Python` `OpenCV`

- 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.