YU-CHING HSU

yuching.hsu@utah.edu **+1-801-815-6372** **Salt Lake City, UT 84103**
https://hsuyuching.github.io https://www.linkedin.com/in/yuchinghsu/

SKILLS

Git | Python | C | C++ | Javascript | Typescript | NodeJS | AngularJS | SQL | MongoDB | HTTP | Linux | MFC | HTML | Sass | CSS | D3 | Keras | Tensorflow | Pytorch

EXPERIENCE

Logitech Inc.
July 2018 – Sep 2018

Imaging Engineer Intern — C | C++ | MFC

- Developed an user-friendly application that can access real-time streaming data and control the focus, white balance, exposure through USB protocol directly.
- Sped up the development process for web-camera by visualizing the streaming AF data in real-time dynamic chart.
- Extended the compatibility from webcam to conference camera by designing an auto byte-mapping confirmation mechanism in firmware.
- Researched and developed human face detection algorithm to help improve the auto focus.

EDUCATION

University of Utah
2019 – **May** 2021

Master's in Computer Science — GPA:3.62/4.0

- Algorithms, Computer Architecture, Web Browser Internals

Yuan Ze University
2018 – 2019

Master's in Electrical Engineering — GPA:4.0/4.0

- Thesis: "Automatic Elevator Button Recognition with CNN Feedback System Enhancement"
- IMECS2018 Conference, IMECS2019 Conference, IAENG IJCS 2020 Journal

Yuan Ze University
2014 – 2018

Bachelor's in Electrical Engineering — GPA:3.77/4.0

- Data Structure, Digital Logic Design, Micro-computer System

COMPETITIONS

Auto Recognition for Unmanned Store with Faster R-CNN

- Placed in top 1% in "Unmanned Store" MATLAB Deep Learning Competition-Accelerate the Power of AI 2019, Terasolf Inc.
- Improved accuracy to 68% by using Resnet-50, connected component for multi-object recognition with 6k images and 105 classes.

PROJECTS

Auto Elevator Button Localization and Recognition
Python | C++ | OpenCV — Feb 2020

- Enhanced robot navigation ability by developing an auto self-calibration elevator button recognition system.
- Improved the auto localization algorithm accuracy to 95.8% by using edge projection, K-means, convolution and NMS.
- Developed the recognition algorithm based on CNN and glyph modelling, and reached 99.9% accuracy.
- Reduced the effect of illumination and reflection by edge enhancement, morphology calibration and template matching.

Mysterious Missing Migrants Visualization
Javascript | HTML | CSS | D3 — Dec 2019

- Designed an interactive world map to provide safer migration suggestion by visualizing the degree of danger area.
- Aggregated the relationship between cause of death, gender, nationality, group size and incident region by extendable table.
- Improved the suggestion for migration route by visualizing dead and missing amount with mouse hover.
- Amplified the cause of death in different size to increase alertness by cloud of words.

Recommendation System with Amazon Products
Java | Galago — Jan 2020

- Developed a ranking model based on review text with CNN and attention network to promote music, toy, game to users.
- Improve accuracy by 0.8% by combining local convolution with global self-attention for rating prediction.
- Enhanced the explanation ability for the system to answer why certain items will be recommended by visualizing the attention score on review text.

Co-reference Extraction for Entities
Python | nltk — Oct 2019

- Developed a coreference solution with semantic match and rule-based algorithm to extract same entities in documents.
- Improved accuracy by 2.38% in F1 score by removing pleonastic "it" pronoun, and reached 49% precision accuracy.
- Strengthened the connection between mentions that have syntactic relation by using dependency parsing information.