Haowei Chung

(xxx) xxx-xxxx | haowei8815@gmail.com | github.com/asd08573064 | haowei-chung

EDUCATION

Carnegie Mellon University **Aug. 2023 – May. 2025**
Master of Computational Data *Pittsburgh, PA*

National Tsinghua University **Sep. 2018 – Jun. 2022**
Bachelor's in Computer *Hsinchu, Taiwan*

- GPA: 4.09/ 4.3 | Academic Excellence Award for the top 1% of students in CS department (Spring 2021)

WORK EXPERIENCE

Research Assistant **Jun. 2022 – Jan. 2023**
National Tsing Hua University *Hsinchu, Taiwan*

- Led a research team and yielded two research papers at top conferences (AAAI, MICCAI) of machine learning
- Conducted research on deep learning fairness and application of computer vision in the medical field
- Organized and led weekly meetings with advisors and conducted paper presentations on deep learning

Software Engineer Intern **Jan. 2022 – Aug. 2022**
Advanced Micro Devices (AMD) | Image signal processor (ISP) Intellectual Property *Hsinchu, Taiwan*

- Prototyped and designed an internal ISP tuning platform to support 20 engineers in imaging algorithm tuning
- Reduced imaging algorithm's parameters tuning time by 90% by developing a raw image conversion feature
- Present at the cross-team weekly meeting and compose ISP software platform documentation

Software Engineer Intern **Jul. 2020 – Aug. 2020**
POINT Robotics | Algorithm Team *Taipei, Taiwan*

- Optimized accuracy of medical images registration algorithm using OpenCV by 15%
- Designed a new manual labeling feature for object detection algorithm and provided flexibility to users

PROJECTS AND RESEARCH

Dynamic Memory Allocator **Jul. 2023 – Aug. 2023**

- Built a Dynamic Memory allocator with a segregated list using **C**
- Optimize the minimum allocated chunk size to 16 bytes and enhance utilization rate to 73.3%

Optimize Machine Learning Fairness on Medical and Facial Image Recognition **Jan. 2023 – Jul. 2023**

- Designed a multi-exit **convolution neural network** and analyzed the bias among image features using **Pytorch**
- Proposed a novel kernel-based regularization ML algorithm and achieved fair prediction on facial datasets
- Outperformed baseline model in fairness metric by 45.8% and improved accuracy by 3.7%

Automatic Medical Report **Jul. 2021 – Jan. 2022**

- Engineered an Image-Text medical reporting model using **Transformer** with **PyTorch**
- Proposed a **contrastive learning** framework and enhanced image features' quality for NLP language models
- Improved NLP metrics (BLUE-1) score by 9% and 38% on IU X-Ray and MIMIC CXR datasets, respectively

Recommendation System: User-item Collaborative **Dec. 2021 – Jan. 2022**

- Designed a User to item collaborative filtering algorithm on MovieLens dataset with **Spark** and **Python**

SKILLS

Programming Language Python, C/C++, Verilog, HTML/CSS, JavaScript, Typescript, Latex, SQL
Software/Framework MapReduce, Unix/Linux, Visual Studio
Machine Learning Pytorch, Tensorflow, Pyspark, Numpy, OpenCV, Sklearn, Deep Learning, Computer Vision