Yi-Chun Chen

yichunc3@andrew.cmu.edu | LinkedIn: www.linkedin.com/in/yichunchenycc | (412) 403-6846

OBJECTIVE

AI engineer with 2.5 years of working experience in developing computer vision-powered products. Seeking a full-time position working on computer vision applications and research problems.

EDUCATION

Carnegie Mellon University, Robotics Institute   Pittsburgh, PA
Master of Science in Computer Vision – GPA: 4.33/4.33   May 2022
National Tsing Hua University   Hsinchu, Taiwan
Bachelor of Science in Power Mechanical Engineering   June 2017

WORK EXPERIENCE

Cisco Systems Inc.   San Francisco, CA
Software Engineer Intern   May 2021 – Aug. 2021
● Prototyped a sign language detector for Webex Meetings; model processes video stream in real time on CPU
Inventec Corporation   Taipei, Taiwan
AI Research Engineer   Jan. 2019 – Sept. 2020
● Deployed an end-to-end machine learning system using LibTorch and C++ on Windows for a laptop inspection machine to inspect millions of laptops every year
● Invented an unsupervised noise-resilient autoencoder for surface defect detection that allows 40% of mislabeled data while maintaining comparable accuracy **[P1]**
● Designed an interpretable anomaly detection model that encodes feature sets from an object detector and combines them with an attention mechanism to classify surface quality of laptops and localize critical defects **[T1]**
Viscovery   Taipei, Taiwan
Computer Vision Engineer   Apr. 2018 – Dec. 2018
● Devised a hierarchical metric learning approach for image retrieval to support the recommendation system handling millions of products on the largest e-commerce website in Taiwan

RESEARCH EXPERIENCE

Robotics Institute, Carnegie Mellon University   Pittsburgh, PA
Kris Kitani's Lab   Aug. 2020 – Jan. 2021
● Invented a RL refinement network to improve per-pixel crack/vessel predictions of a general segmentation model **[P2]**
Dept. of Electrical Engineering, National Tsing Hua University   Hsinchu, Taiwan
Research Assistant, Vision Science Lab   Feb. 2017 – Mar. 2018
● Established a 2.5-D object detection model and prototyped a wearable vibrotactile-feedback device for a real-time guidance system, making 83% visually impaired users confident in reaching objects **[P3]**
● Introduced normal-field-of-view grounding task to navigate 360° videos from video subtitles with a proposed Visual Grounding Model **[P4]**
● Proposed Show-and-Tell model to predict and caption salient views in 360° images by vision-language translation; work was published in ECCVW'18 [Poster link]

TALK AND SELECTED PUBLICATIONS

[T1] Trista Chen and **Yi-Chun Chen**. "Toward Taming the Training Data Complexity in Smart Manufacturing". In NVIDIA's GPU Technology Conference (GTC), 2020. [Talk link]

[P1] D. S. Tan, **Yi-Chun Chen**, T. P.-C. Chen, W.-C. Chen. "TrustMAE: A Noise-Resilient Defect Classification Framework using Memory-Augmented Auto-Encoders with Trust Regions". In *WACV*, 2021. [Paper link]

[P2] J. Park, **Yi-Chun Chen**, Y.-J. Li, K. Kitani. "Crack Detection and Refinement via Deep Reinforcement Learning". In *ICIP*, 2021.

[P3] M.-L. Shih, **Yi-Chun Chen**, C.-Y. Tung, C. Sun, C.-J. Cheng, L. Chan, S. Varadarajan, M. Sun. "DLWV2: a Deep Learning-based Wearable Vision-system with Vibrotactile-feedback for Visually Impaired People to Reach Objects". In *IROS*, 2018. [Paper link]

[P4] S.-H. Chou, **Yi-Chun Chen**, K.-H. Zeng, H.-N. Hu, J.-l. Fu, M. Sun. "Self-view Grounding Given a Narrated 360° Video". In *AAAI*, 2018. [Project page]

SKILLS

Programming Languages: Python, C/C++
Tools: PyTorch, LibTorch, Tensorflow, Docker, Git, OpenCV, Scikit-Learn
Computing Environments: Linux, Windows, Raspberry Pi