Sheng-Yang (Sam) Chiu 邱聖揚

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EDUCATION

National Yang Ming Chiao Tung University (NYCU), Hsinchu, Taiwan — Fall 2019 - Summer 2022
M.S. in Artificial Intelligence
Advisor: Yu-Chee Tseng and Jen-Jee Chen
Thesis: Low-Resolution Thermal Sensor-Guided Image Synthesis

Yuan Ze University, Taoyuan, Taiwan — Fall 2015 - Summer 2019
B.S. in Information Communication
Graduation Project: Development of art installation "Inverted Tinge," a large interactive paint-in-the-water device involving a 12*12 electric motor array submerged in the water. Report: `bit.ly/3WFj7Qk`

EXPERIENCE

College of Artificial Intelligence, NYCU, Taiwan — Mar 2020 - Nov 2021
Research Assistant
- Research on Intelligent Diagnosis of Motor Faults. Led the team to experience with various feature extraction (VAE/GraphAE) networks and clustering analysis techniques (KNN/OC-SVM). Advised by Jen-Jee Chen.
- Development of Target Detection and Tracking System for UAV Fleet. Developed object detection and tracking algorithm, mission control GUI, and 3D map. Advised by Yu-Chee Tseng.

Industrial Technology Research Institute, Hsinchu, Taiwan — Jun 2018 - Dec 2018
Research Internship
- Accepted competitively (19%) through DIGI+Talent program held by Ministry of Economic Affairs, Taiwan.
- Assisted the development of lip recognition model for Mandarin speech

SELECTED PROJECTS

Low-Resolution Heatmap Segmentation based on Thermopile Array Sensor — 2020
- Collected ground-truth mask using Mask-RCNN on RGB images
- Developed a U-Net like segmentation network

AI-Powered Interactive Trampoline — 2020
- Built a neural network to determine landing positions based on ultrasonic sensors
- Design a mini-game GUI for visualization

Undergraduate Research Fellowship, National Science and Technology Council, Taiwan — 2018
- Realtime Bed-Exit Detection based on Thermal Array Sensor with Machine Learning (107-2813-C-155-013-H)

Development of Auto Design Tool for Heavy-Duty Metal Packaging Optimization — 2017
- Assisted in the development of evolutionary algorithm and API
- Participated in CATIA CAD/CAE 36-hour training course and received certifications

PUBLICATIONS

- **Sheng-Yang Chiu***, Yu-Ting Huang*, Chieh-Ting Lin, Yu-Chee Tseng, Jen-Jee Chen, Meng-Hsuan Tu, Bo-Chen Tung, and YuJou Nieh, "Privacy-Preserving Video Conferencing via Thermal-Generative Images" to appear in *IEEE International Conference on Robotics and Automation (ICRA)*, 2023.

- **Sheng-Yang Chiu**, Yu-Chee Tseng, and Jen-Jee Chen, "Low-Resolution Thermal Sensor-Guided Image Synthesis" in *Workshop on Real-World Surveillance: Applications and Challenges in conjunction with IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), Waikoloa, HI, USA, January 3-7*, 2023.

- Sheng-Ya Chiu, **Sheng-Yang Chiu**, Yu-Ju Tu, and Chi-I Hsu, "Gesture-based Intention Prediction for Automatic Door Opening using Low-Resolution Thermal Sensors: A U-Net-based Deep Learning Approach," in *Eurasia Conference on IOT, Communication and Engineering (ECICE), Yunlin, Taiwan, October 29-31*, 2021.

- Wenpei Zheng, **Shen-Yang Chiu**, Jui-Chien Hsieh, and Chaochang Chiu, "Smart Rabbit - A Wearable Device As Intelligent Pacer for Marathon Runners," in *IEEE International Conference on Application Specific Systems, Architectures and Processors (ASAP), New York City, NY, USA, July 15-17*, 2019.

- **Sheng-Yang Chiu**, Jui-Chien Hsieh, Chi-I Hsu, and Chaochang Chiu, "A Convolutional Neural Networks Approach with Infrared Array Sensor for Bed-Exit Detection," in *International Conference on System Science and Engineering (ICSSE), New Taipei City, Taiwan, June 28-30*, 2018.

SKILLS

Software Tools: Tensorflow, OpenCV, Numpy, Matplotlib, PyQt, Git, Python, Javascript, and C++
Languages: English and Mandarin