

## 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/3CT3Vam](https://bit.ly/3CT3Vam)

## 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 Design Optimization System for Heavy-Duty Packaging** 2017  
 • Assisted in the development of evolutionary algorithm and API  
 • Participated in CATIA CAD/CAE training course and awarded with 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