Yan-Shuo Li

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Education

National Central University   *Taoyuan, Taiwan*
MSc in Mathematics   *Jun. 2022 - Jul. 2024 (expected)*
- Research Interests: combinatorial optimization, multi-robot task allocation, and reinforcement learning.
- Supervisor: Prof. Kuo-Shih Tseng
- Lab: Robotic Search Lab

Ming Chuan University   *Taoyuan, Taiwan*
BS in Computer and Communication Engineering   *Sept. 2015 - Jun. 2019*
- Supervisor: Prof. Chaur-Heh Hsieh

Skills

Professional	Deep Learning, Machine learning, Object detection and tracking, Matroid theory, Compressed sensing
Programming	Python, C/C++, Java, JavaScript, SQL, Bash.
Software	PyTorch, TensorFlow, OpenCV, Git, Docker, ROS, Latex.
Languages	Chinese (Native Speaker), English (Advanced).

Experience

National Central University   *Taoyuan, Taiwan*
Research Assistant   *Aug. 2022 - present*
- Conducted research supported by the Ministry of Science and Technology (MOST).

TAO Info   *Taipei, Taiwan*
AI Engineer   *Jan. 2021 - Jun. 2022*
- Collaborated with En Chu Kong Hospital to design a pharmaceutical inspection machine. Developed a classification model using self-supervised contrastive learning methods for the inspection machine. Successfully achieved a classification rate of 98% for all types of medicine packages.
- Developed multi-CNN models for defect inspection of LCD panels, achieving an accuracy of 86%.

EverComm Singapore   *New Taipei, Taiwan*
Software Developer   *Mar. 2020 - Jan. 2021*
- Developed a solar-panel monitoring system, encompassing ETL processes, database architecture design, and UI webpage integration.
- Improved real-time data processing algorithm using array programming technique, reducing the processing time for 10,000 MPPT device data from 8 minutes to 2 minutes.
- Developed an anomaly detection system for chillers and cooling towers using machine learning methods (k-means algorithm and autoencoder).

National Chung-Shan Institute of Science and Technology (NCSIST)   *Taoyuan, Taiwan*
Machine Learning Intern   *Jan. 2019 - Jun. 2019*
- Collected and analyzed historical time-series dataset (river levels and rainfall) from various sources.
- Developed and trained a CNN+LSTM model for flood forecasting.
- Implemented FaceNet model for a face recognition access control system.

Cedar Point Amusement Park   *Sandusky, OH*
Park Services   *Jun. 2017 - Sept. 2017*
- Assisted guests throughout the park.

Publications

JOURNAL ARTICLES

1. **Yan-Shuo Li** and Kuo-Shih Tseng, "Multi-robot Search in 3D Environments using Submodularity with Matroid Intersection Constraints," IEEE Transactions on Robotics (Under review).

2. Chaur-Heh Hsieh, **Yan-Shuo Li**, Bor-Jiunn Hwang, and Ching-Hua Hsiao, "Detection of atrial fibrillation using 1D convolutional neural network," Sensors, 2020. [pdf]

CONFERENCE PROCEEDINGS

1. **Yan-Shuo Li** and Kuo-Shih Tseng, "Computation-Aware Multi-object Search in 3D Space using Submodular Tree," IEEE International Conference on Robotics and Automation (ICRA), 2024. [video] [pdf]

2. **Yan-Shuo Li** and Kuo-Shih Tseng, "Multi-robot Search in a 3D Environment with Intersection System Constraints," IEEE International Conference on Robotics and Automation (ICRA), 2024. [video] [pdf]
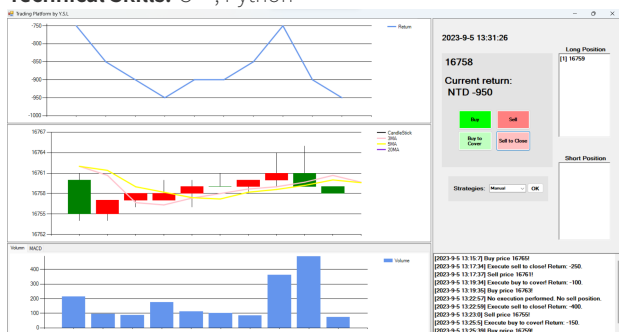
Projects

Trading Platform *Taoyuan, Taiwan*

National Central University *Jun 2023*

- video / code
- **Technical Skills:** C++, Python

Shooting Video Game with Realtime Face Tracking Control *Taoyuan, Taiwan*

Ming Chuan University *Dec 2017*

- code
- **Technical Skills:** Python, OpenCV, Object Tracking