Jung-Chun Liu

☎ +886 978 523 003 | ✉ wendy134577@gmail.com

Education

National Taiwan University   *Taipei, Taiwan*
*Master of Science, **Electrical Engineering and Computer Science***   *2021 - Recent*

- Overall GPA: 4.2/4.3
- Related Coursework:
  - Robotics, Stochastic Control, Convex Optimization, Introduction to Logic, Advanced Algorithms

National Taiwan University   *Taipei, Taiwan*
*Bachelor of Science in Engineering, **Electrical Engineering***
*Double Major: Bachelor of Science, **Psychology***   *2016 - 2021*

- **Dean's list** (Top 5% based on GPA) for one semester
- Overall GPA: 3.87/4.3, last 60 GPA: 4.05/4.3.
- Related Coursework:
  - **Computer Science**:
    Probability & Statistics, Data Structure & Programming, The Design & Analysis of Algorithms, Introduction to Artificial Intelligence & Machine Learning, Genetic Algorithm
  - **Cognitive Science**:
    General Psychology, Human Learning & Cognition, Perceptual Psychology, Social Psychology, Physiological Psychology

Publications

Papers

- **Jung-Chun Liu** and Tsung-Te Liu. 2022. "Multi-Robot Formation Control using Collective Behavior Model and Reinforcement Learning." *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2261–65. Austin, TX, USA: IEEE. https://doi.org/10.1109/ISCAS48785.2022.9937572.
- **Jung-Chun Liu**, Kuei-An Li, Su-Ling Yeh, and Shao-Yi Chien. 2022. "Assessing perceptual load and cognitive load by fixation-related information of eye movements." *Sensors* 22 (3): 1187. https://doi.org/10.3390/s22031187.

Research Experiences

Taiwan Evolutionary Intelligence Laboratory   *Taipei, Taiwan*
Graduate Student, Supervisor: Prof. Tian-Li Yu   *Jul. 2021 - Recent*

- **Automatic Learning Framework on Reinforcement Learning with AI Planning**
  - Proposed a framework to decompose tasks through mutual information and recompose them as representations of graphs and rules.
  - Devised an approach to train an off-the-shelf agent to learn complex tasks.
  - demonstrated the reusability of rules for the agent to learn various tasks.
- **Reachability Graph with Video Segmentation**
  - Led a team of 4 researchers in an ongoing project investigating robot arm reachability with video segmentation.
  - Designed and established the experimental framework and developed detailed research plans.

Explorer of Perception and Attention Lab
Research Assistant, Supervisor: Prof. Su-Ling Yeh

Taipei, Taiwan
Jan. 2020 - Jan. 2022

- **The Influence of Long-Term Behavior on Robot Acceptance in Human-Robot Interaction**
  - Programmed robot behaviors on the Android platform for psychological experiments.
  - Implemented face recognition and expression detection using Keras.

Ganzin Technology
Research Intern

Taipei, Taiwan
Jun. 2020 - Mar. 2021

- **Workload Research using Eye Tracking Technology**
  - Collaborated with Explorer of Perception and Attention Lab.
  - Constructed the experiment program to record eye movements and keyboard events while participants performed tasks.
  - Conceived the experiment procedure and analyzed data.

Energy-Efficient Circuits and Systems Lab
Undergraduate Research, Supervisor: Prof. Tsung-Te Liu

Taipei, Taiwan
Sep. 2018 - Aug. 2021

- **Distributed Multi-Robot Formation Control**
  - Proposed a novel bio-inspired approach based on models of collective behavior and on-policy reinforcement learning for distributed multi-robot formation control.
  - Devised the hardware architecture to reduce the area and power consumption.
  - Outperformed previous software and hardware methods in JSSC and ISSCC.

Teaching Experiences

Cornerstone EECS Design and Implementation
Teaching Assistant, Instructor: Prof. Shih-Yuan Chen

Taipei, Taiwan
Sep. 2021 - 2022

- Scheduled and taught 72 first-year students in three classes to design and implement Arduino autonomous cars using various hardware and software tools.
- Gave speeches to teach students how to write weekly progress reports in the STAR format.
- Built a website for students to visualize their searching algorithms and program outputs.

Computer Programming
Teaching Assistant, Instructor: Prof. Tian-Li Yu

Taipei, Taiwan
Sep. 2021 - 2022

- Taught 50 first-year students in lab and helped them learn C++ programming.
- Designed the course assignments, exams, and projects.

Digital System Design
Teaching Assistant, Instructor: Prof. An-Yeu Wu

Taipei, Taiwan
Feb. 2019 - Jun. 2019

- Assisted in teaching undergraduate courses.
- Prepared and graded course homework.

Leadership & Extracurricular Activities

Public Address Team
National Taiwan University Student Association

Taipei, Taiwan
Sep. 2019 - Jun. 2020

- **Officer of Lighting System**
  - Managed and arranged the auditorium stage lighting system, including power system, digital communication networks, and stage lighting instruments.
  - Trained 15 team members to be proficient in the lighting system.
- **Lighting Designer**
  - Provided technical support for student activities and performances.
  - Collaborated with stage crew and performers on lighting design and operations.