

## EDUCATION

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### National Yang Ming Chiao Tung University

Hsinchu City, Taiwan

*B.S. in Communication Engineering, GPA: 3.86/4.3*

*Sep 2022 – Feb 2025*

- **Concentrations:** Machine Learning & Change Detection
- **Coursework:** Wireless Communication and Signal Processing, Computer Architecture, Image Process

### National Taipei University

New Taipei City, Taiwan

*B.S. in Communication Engineering, GPA: 3.76/4.0*

*Sep 2018 – Jun 2022*

- **Concentrations:** Signal Processing & Communication System
- **Courses:** Communication Theory, Queueing Theory, Coding Theory, Information Theory, Computer Network, Stochastic Processes, Machine Learning, Multimedia Signal Processing

## PUBLICATIONS

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### A Modularized Framework for Piecewise-Stationary Restless Bandits

*AISTATS 2026*

- **Authors:** Kuan-Ta Li, **Chia-Chun Lin**, Ping-Chun Hsieh, Yu-Chih Huang
- *International Conference on Artificial Intelligence and Statistics (AISTATS), 2026*
- **Spotlight Presentation** (Top ~3% of submissions; acceptance rate 28%)

## WORK EXPERIENCE

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### Silicon Motion Technology Corp.

New Taipei City, Taiwan

*Firmware Engineer*

*Nov 2025 – Present*

- Debugged firmware issues related to thermal management to improve system stability.
- Implemented simple firmware features, including extending BootISP code size and adding LightSwitch variables for NVMe management.
- Developed scripts to automate testing workflows, reducing manual errors and improving validation efficiency.
- Supported FPGA-based feature testing and validation for SSD controller firmware.

## THESIS

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### An active approach for piecewise stationary restless bandit problem

*Sep 2022 - Feb 2025*

- **Advisor:** Professor Yu-Chih Huang
- **Collaborators:** Professor Yu-Pin Hsu, Professor Ping-Chun Hsieh
- Developed a novel model – Piecewise Stationary Restless Bandit – and designed a low-complexity adaptive algorithm for resource allocation in non-stationary communication systems, achieving near-optimal performance with efficient change detection.

## RESEARCH & PROJECTS

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### Undergraduate Research Fellowship

*Ministry of Science and Technology (MOST), Taiwan*

*July 2021 – Feb. 2022*

- **Advisor:** Professor Yu-Pin Hsu
- Modeled wireless networks as multi-armed bandits to optimize decisions under uncertainty.
- Studied adversarial bandits from malicious attacks and their impact on performance.
- Enhanced EXP3 by integrating confidence levels for improved adversarial bandit handling.

## Water Segmentation with UResNet152

Jan. 2024

- Applied preprocessing (homomorphic filtering, mean shift segmentation) to boost accuracy.
- Trained and validated UResNet152, improving segmentation performance metrics.

## Image Processing Toolkit (C)(🔒)

Sept. 2023 – Jan. 2024

- Implemented chromatic enhancement, scaling, resolution adjustment, luminosity and sharpness tuning.

## JPEG Compression (C)(🔒)

July 2021 – Feb. 2022

- Built a C-based JPEG compression program using techniques such as DCT, quantization, zigzag, and Huffman coding, color field transform.

## Shortest Path Optimization (C)

Sept. 2020 – Jan. 2021

- Developed Dijkstra's algorithm for shortest path computation in simulated networks under Linux.

## COURSEWORK

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### • Graduate-Level:

Computer Architecture, Wireless Communication & Signal Processing, Optimization Theory & Application, Digital Signal Processing, Image Processing, Deep Learning, Random Processes

### • Undergraduate-Level:

Communication Theory, Queueing Theory, Machine Learning, Multimedia Signal Processing, Information Theory, Coding Theory, Computer Network, Detection & Estimation, Data Structure, Discrete Mathematics, Numerical Analysis

## EXTRACURRICULAR ACTIVITIES

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- **Work and Travel Program**, Yellowstone National Park, USA
- **Vice President**, Student Association of Communication Engineering Department
- **Academic Exchange Program**, Shanghai Jiao Tong University
- **Summer Leadership Program**, Czech University of Life Sciences

## SKILLS

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**Programming Languages:** Python, C, MATLAB

**Domain Knowledge:** Digital Signal Processing, Machine Learning, Wireless Communication

**Languages:** Mandarin (Native), English (Professional Proficiency)