

Yi-Chun (Kevin) Liao

✉ ycliao718@gmail.com | ☎ (+886) 978-519-004 | 🌐 Yi-Chun Liao | 🌐 My Site

EDUCATION

National Taiwan University (NTU)

B.Sc. in Computer Science and Information Engineering (CSIE)

- Overall GPA: 3.89/4.3 (3.7/4.0)

Taipei, Taiwan

Sep. 2021 – Dec. 2025

PUBLICATIONS

Yi-Chun Liao, Chieh-Lin Tsai, Yuan-Hao Chang, Camélia Slimani, Jalil Boukhobza, and Tei-Wei Kuo. “RETENTION: Resource-Efficient Tree-Based Ensemble Model Acceleration with Content-Addressable Memory,” Under review by *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 2025, doi:[10.48550/arXiv.2506.05994](https://doi.org/10.48550/arXiv.2506.05994)

Hong-Wei Li, Ping-Ting Liu, Bo-Wei Lin, **Yi-Chun Liao**, and Yennun Huang. “IPMES: A Tool for Incremental TTP Detection Over the System Audit Event Stream,” *2024 54th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, Brisbane, Australia, 2024, pp. 265-273, doi:[10.1109/DSN58291.2024.00036](https://doi.org/10.1109/DSN58291.2024.00036).

HONORS

First Place of the 2025 Bachelor Thesis Award

National Taiwan University

- Distinguished through a three-stage selection process and recognized as one of the top 2 in the CSIE Department, the best in the College of EECS, and one of the top 6 university-wide.

Taipei, Taiwan

Jun. 2025

Appier Enterprise Award

Department of Computer Science and Information Engineering, National Taiwan University

- Received the Most Potential Award from Appier in the departmental independent study exhibition.

Taipei, Taiwan

Jun. 2025

Dean’s List Award

National Taiwan University

- Ranked 1/155 in the department for both Spring and Fall 2024 semesters.

Taipei, Taiwan

Sep. 2024

Irving T. Ho Memorial Scholarship

National Taiwan University

- Awarded to 3 students in the department for academic excellence.

Taipei, Taiwan

Sep. 2024

First Place of AUO Enterprise Award

MakeNTU 2024 (Makerthon)

- Designed an in-car RPG game for AUO smart windows to enhance the travel experience.
- Integrated gesture recognition models, speech-text transformation, OpenAI GPT assistant, FastAPI, Flutter, and Pygame.

Taipei, Taiwan

May 2024

RESEARCH EXPERIENCE

Research Assistant & Summer Intern

University of Notre Dame, Advisor: Prof. Xiaobo Sharon Hu

- Conduct independent research on realizing best-match functionality across multiple content-addressable memory tiles to enhance implementation scalability.

Indiana, United States

May 2025 – Present

Research Assistant & Summer Intern

Academia Sinica, Advisors: Prof. Yuan-Hao Chang and Prof. Tei-Wei Kuo

- Conduct independent research on accelerating tree-based ensemble models with content-addressable memory to achieve resource-efficient acceleration.
- Improved space efficiency by $4.35\times$ to $207.12\times$ with less than 3% accuracy degradation by introducing RETENTION. The first-authored paper is currently under review by CODES+ISSS 2025 journal track.

Taipei, Taiwan

Jul. 2024 – Jun. 2025

Research Assistant & Summer Intern

Academia Sinica, Advisor: Prof. Yennun Huang

- Collaborated on developing intrusion detection tool [IPMES](#) to detect incremental TTPs in system audit event streams. The co-authored paper was accepted by DSN 2024.
- Constructed an automatic system attack scenario generator independently to record hundreds of TTP attacks. The system was subsequently utilized for synthesizing system attack datasets.

Taipei, Taiwan

Jul. 2023 – Jun. 2024

TEACHING EXPERIENCE

Teaching Assistant
Computer Architecture, Lecturer: Prof. Chia-Lin Yang

- Supported the instruction of the Computer Architecture course at NTU, enrolled by over 100 students.
- Led weekly discussion sessions, designed and graded assignments, quizzes, and exams.
- Provided voluntary office hours, exceeding 10 hours per week during exam periods.

Taipei, Taiwan
Sep. 2024 – Jan. 2025

Teaching Assistant
APCS Camp

- Provided TA hours for over 300 C++ beginners during two-week crash courses.
- Adapted teaching strategies including programming problem solving and customized course reviews to meet the diverse needs and skill levels of students.

Taipei, Taiwan
Jul. 2022/23 – Aug. 2022/23

SKILLS

- Language Proficiency:** English (Proficient), Mandarin (Native), Japanese (Advanced)
- Technical Skills:** C, C++, Python, Java, Git, Linux, JavaScript, PyTorch
- Soft Skills:** Leadership, Management, Communication, Critical Thinking, Resilient, Teamwork

NOTABLE COURSES

- Mathematics, Theory, and Algorithm:** Calculus, Linear Algebra, Probability, Formal Languages and Automata Theory, Data Structure and Algorithm, Algorithm Design and analysis
- Software Design:** Operating System, System Programming, Computer Network, Network Administration and System Administration, Web Programming
- Hardware Design:** Computer Architecture, Digital System Design and Laboratory, Computer System Laboratory
- Machine Learning:** Machine Learning, Applied Deep Learning, Foundations of Artificial Intelligence

ACTIVITIES

President
NTU CSIE Department Student Association

- Directed the student council of the CSIE department.
- Promoted student welfare and represented over 600 students in faculty meetings, contributing to departmental decisions.

Taipei, Taiwan
Aug. 2023 – Jul. 2024

Vice President
NTU EECS College Student Association

- Represented over 1500 students in college faculty meetings and helped shape student-related policies.

Taipei, Taiwan
Aug. 2023 – Jul. 2024

President
NTU Cancer Children Service Club

- Led a 50-member service club, overseeing budget allocation and organizing both volunteer service events and leisure activities for members.

Taipei, Taiwan
Feb. 2023 – Jul. 2023

Vice Coordinator
NTU CSIE Camp

- Organized a 6-day camp for over 100 high school students with a 50-member staff team.
- Designed activities to introduce students to the CSIE department and provide insights into university life.

Taipei, Taiwan
Feb. 2023 – Jul. 2023