

Yi-Chun (Kevin) Liao

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EDUCATION

National Taiwan University (NTU)

B.Sc. in Computer Science and Information Engineering (CSIE), Advisor: Prof. Tei-Wei Kuo

Taipei, Taiwan

Sep. 2021 – Dec. 2025

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

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

Taipei, Taiwan

Jun. 2025

- 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.

Appier Enterprise Award

Department of Computer Science and Information Engineering, National Taiwan University

Taipei, Taiwan

Jun. 2025

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

Dean’s List Award

National Taiwan University

Taipei, Taiwan

Sep. 2024

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

Irving T. Ho Memorial Scholarship

National Taiwan University

Taipei, Taiwan

Sep. 2024

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

First Place of AUO Enterprise Award

MakeNTU 2024 (Makerthon)

Taipei, Taiwan

May 2024

- 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.

RESEARCH EXPERIENCE

Research Assistant & Summer Intern

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

Indiana, United States

May 2025 – Present

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

Research Assistant & Summer Intern

Academia Sinica, Advisor: Prof. Yuan-Hao Chang

Taipei, Taiwan

Jul. 2024 – Jun. 2025

- 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.

Research Assistant & Summer Intern

Academia Sinica, Advisor: Prof. Yennun Huang

Taipei, Taiwan

Jul. 2023 – Jun. 2024

- 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.

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