

KUAN-HSUN TU

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EDUCATION

National Taiwan University

Sep. 2021 – Present

Bachelor of Science in Computer Science and Information Engineering

Taipei, Taiwan

- **Expected Graduation:** June 2026
- **Research Focus:** Embodied AI, Vision-Language-Action models, and large-scale learning systems

AWARDS & HONORS

SC25 Student Cluster Competition – Finalist (Top 8 Worldwide)

Nov. 2025 (Upcoming)

ACM/IEEE Supercomputing Conference

St. Louis, USA

- Selected as one of 8 finalist teams worldwide for the SC25 Student Cluster Competition
- Preparing HPC cluster design and benchmarking for upcoming live competition

NTU CSIE Undergraduate Project Exhibition – 1st Place

June 2025

Department of Computer Science and Information Engineering

Taipei, Taiwan

- Awarded 1st place with “Split Decisions,” a vision-language planning and action control framework enabling structured robot demonstrations

NTU-IBM Qiskit Hackathon – 1st Place

Aug. 2024

IBM Quantum Hub

Taipei, Taiwan

- Developed quantum autoencoder compressing 3901 to 47 gates (98.1% fidelity, 2× faster on IBM)

PUBLICATIONS

- [1] **K.-H. Tu***, H.-C. Liu*, P. Y. Wu*, S.-H. Sun, and T.-W. Ke, “Split Decisions: VLM-Guided Action Sampling for Efficient RL Exploration,” *under review at ICLR 2026*.
- [2] J. Hsieh, **K.-H. Tu**, K.-H. Hung and T.-W. Ke, “DexMan: Learning Bimanual Dexterous Manipulation from Human and Generated Videos,” *under review at ICLR 2026*.
- [3] Y. Jangir, Y. Zhang, K. Yamazaki, C. Zhang, **K.-H. Tu**, T.-W. Ke, L. Ke, Y. Bisk, and K. Fragkiadaki, “RobotArena ∞: Unlimited Robot Benchmarking via Real-to-Sim Translation,” *under review at ICLR 2026*.
- [4] C.-S. Chiang*, **K.-H. Tu***, J.-W. Liao*, and T.-W. Ke, “Initflow: Rethinking the importance of the prior for flow matching,” *under review at CVPR 2026*.

RESEARCH EXPERIENCE

Embodied AI Lab

Sep. 2024 – Present

Undergraduate Researcher – Advisor: Dr. Tsung-Wei Ke

Taipei, Taiwan

- Primary researcher driving multiple embodied AI directions, including vision-language guided exploration, video-to-digital-twin policy learning, and flow policy acceleration
- Collaborated with Carnegie Mellon University (Prof. Katerina Fragkiadaki) on video-to-digital-twin benchmarking (ICLR 2026)

Mobile and Vehicular Networking Lab

Sep. 2025 – Present

Undergraduate Researcher – Advisor: Dr. Hsin-Mu (Michael) Tsai

Taipei, Taiwan

- Explored vision-language model guided exploration for reinforcement learning agents, with applications to real-world system administration tasks

Scanning Probe Microscopy Lab

June 2023 – Aug. 2023

Lab Member – Department of Physics, NTU

Taipei, Taiwan

- Developed ML tools that improved STM imaging analysis for nanoscale material studies

TECHNICAL EXPERIENCE

Lead System Administrator

July 2025 – Present

System Administration Team, Department of CSIE, NTU

Taipei, Taiwan

- Appointed to lead department-wide infrastructure governance and continuity planning
- Supervised junior system administrators and optimized workflows across compute and services supporting 1,000+ faculty, staff, and students

HPC Student Cluster Engineer

July 2025 – Present

NTU Student Cluster Competition Team – Collaborating with Dr. Chun-Yi Lee

Taipei, Taiwan

- Built and optimized a full HPC cluster stack from scratch, benchmarked with MLPerf and HPL, achieving SC25 competition-level performance

Head of Contest Infrastructure

May 2024 – Sep. 2024

Malaysia National Secondary School Programming Contest

Malaysia (Remote)

- Led deployment of a high-reliability contest infrastructure (PXE boot, Proxmox VE, isolated routing) for Malaysia's national programming competition with 2,000+ participants
- Coordinated across institutions and delivered full documentation for local execution

Web Services Team Lead

Sep. 2024 – June 2025

System Administration Team, Department of CSIE, NTU

Taipei, Taiwan

- Led development and operations of department-wide web platforms, including a seminar booking system serving 1,000+ users, ensuring reliable performance across mission-critical services

TEACHING EXPERIENCE

Lead Teaching Assistant

Sep. 2025 – Present

Network Administration & System Administration, Department of CSIE, NTU

Taipei, Taiwan

- Coordinated a TA team in grading, lab design, and assignment workflows for 80+ students
- Supervised other TAs and ensured consistency in lab delivery and exam evaluation

Teaching Assistant

Sep. 2025 – Present

Parallel Programming, Department of CSIE, NTU

Taipei, Taiwan

- Set up and maintained lab machines, including system configuration and software environments
- Provided guidance to students on debugging, cluster usage, and automation workflows

Teaching Assistant

Mar. 2025 – June 2025

Network Administration & System Administration, Department of CSIE, NTU

Taipei, Taiwan

- Assisted in grading, lab support, and student Q&A for 80+ students
- Supported lab setup and guided students in system configuration and automation tasks