

Mao Chi (Matthew) He

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EDUCATION

- **University of California, Berkeley** Aug 2024 – May 2025
Exchange Student, Computer Science Department Berkeley, CA
- **National Tsing Hua University (Taiwan)** Aug 2021 – May 2024
B.S., Interdisciplinary Program of Engineering (CS + MechE) Hsinchu, Taiwan

EXPERIENCE

- **Microsoft** Sep 2025 – Mar 2026
Research & Development Intern @ MAI-A Ads Taipei, Taiwan
 - Architected and developed **RecapRon**, an **AI-powered meeting recap platform** that converts long recordings into concise highlight videos (~10% of original length).
 - Engineered **LLM pipelines** for transcript segmentation, summarization, and script generation, improving output coherence and downstream reliability.
 - Designed reusable **agent-native workflow modules** with **Claude Code Skills** to decompose complex AI tasks into scalable components.
- **Institute of Information Science, Academia Sinica** Jul 2025 – Mar 2026
Research Assistant Taipei, Taiwan
 - Developed an **event-based optical tactile sensing** framework for robotic manipulation with real-time contact, compliance, and slip perception at **1500 FPS**.
 - Proposed a **self-supervised spatio-temporal pretraining** method for tactile data to improve representation learning and generalization across downstream tasks.
 - Built a real-time **multimodal robotics pipeline** by integrating the tactile sensor, gripper, robot arm, and **VLA model** through **ROS2**.
- **CVLab, National Tsing Hua University** Jan 2025 – Dec 2025
Undergrad Research Assistant Hsinchu, Taiwan
 - Applied **3D Gaussian Splatting** to real-time rendering and **3D scene reconstruction**, improving simulation efficiency and geometric fidelity.
 - Constructed **digital twin models** from sparse-view inputs (e.g., 4 images) for real-world scene simulation.
- **CNELAB, National Tsing Hua University** Aug 2023 – Dec 2024
Undergrad Research Assistant Hsinchu, Taiwan
 - Designed and programmed a frequency flashing device using **Arduino UNO R3** with a 9-LED array for SSVEP experiments.
 - Collected **32-channel EEG signals** and applied signal processing and machine learning methods, including **CNN, CCA, SVM, and Random Forest**.

PUBLICATIONS

- Patterson Hsieh*, Chia-Jui Yeh*, **Mao-Chi He***, Wen-Han Hsieh[†], Elvis Hsieh[†]. “Seg the HAB: Language-Guided Geospatial Algae Bloom Reasoning and Segmentation.” *NeurIPS 2025 Workshop on Tackling Climate Change with Machine Learning*, 2025. [Paper]
- *Equal contribution [†]Co-supervising authors

PROJECTS

- **AI Agent Project** Jan 2025 – Present
Developer Berkeley, CA
 - Designed a **LangGraph + LangChain + Qdrant** workflow to autonomously draft replies for **medical insurance** e-mails.
 - Targeted a **50% reduction** in insurance paperwork time, potentially saving physicians **7–10 hours per week** for patient care.
- **AI Cup Hackathon** Oct 2024 – Nov 2024
Participant (7th / 487 teams) Taiwan
 - Applied **OCR** to extract text from images and generate embeddings for retrieval and analysis.
 - Integrated **ChatGPT, Gemini, Claude**, and **Llama** APIs to improve answer quality for image-based question answering.
- **GenAI Stars Hackathon** May 2024 – Jul 2024
Participant (Semifinalist & Merit Award) Taiwan
 - Built a sports-analysis pipeline using **YOLOv8** for player detection, **KMeans** for team classification, and **Whisper** for speech-to-text.
 - Integrated video processing, speech understanding, and **GPT-4**-based summarization into a **Flutter** application.