



# Che-Wei Hsu 徐哲璋

Student at National Taiwan University specializing in **Human-Computer Interaction** research.

Background in **Mechanical Engineering**; admitted to the **M.S. in Computer Science**.

Currently affiliated with the **NTU Dexterous Interaction Lab (靈巧互動實驗室)**

**Two years of research experience at the NTU HCI Lab**, with strengths in research methodology, interactive system design, data analysis, and experimental prototyping

Focus on **haptic integration**, **wearable devices**, and **accessibility-driven interactive system** to enhance human well-being

## Contact

### Phone

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### Email

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### Personal Website

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### Google Scholar

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[hl=en&authuser=1&user=CaL1q7QAAAAJ](https://scholar.google.com/citations?hl=en&authuser=1&user=CaL1q7QAAAAJ)

## Core Skills

- Addictive Manufacturing
- CNC Manufacturing
- Computer Aided Design
- Data Analysis
- Embedded System
- Emergency Medical -Technician 1
- EMI Teaching Assistant
- Machine Learning
- Software Engineering
- Statistic

## Expertise

- Creativity problem solving
- Research methodologies
- Prototype design
- Team leading

## Language

**Mandarin (native)**

**English (Fluent)**

- TOEFL 94/120 (R24, L27, S21, W22)

## Education

### B.S. in National Taiwan University Mechanical Engineering

ETA graduation : 2026/08

- Undergraduate Research Intern in **NTU HCI Lab**
- Summer Research Fellowship in **UChicago Human Computer Integration Lab**
- **EMI TA** in NTU CSIE's course: Multimodal-HCI

### M.S. in National Taiwan University Computer Science and Information Engineering

ETA enrollment : 2026/09

ETA graduation : 2027/06

- Master student in **Dexterous Interaction Lab**

## Papers

*Note: ACM CHI and ACM UIST are the top-tier conferences for HCI*

### HeadTurner **ACM CHI 2025 Short Paper Accepted (7.8%)**

Enhancing Viewing Range and Comfort of using Virtual and Mixed-Reality Headsets while Lying Down via Assisted Shoulder and Head Actuation

Author: En-Huei Wu, \*Po-Yun Cheng, \***Che-Wei Hsu**, \*\*Cheng-Hsin Han, \*\*Pei-Chen Lee, \*\*Chia-An Fan, \*\*\*Yu-Chia Kuo, \*\*\*Kai-Jing Hu, \*\*\*Yu Chen, Prof. Mike Y. Chen

- Designed and implemented the HeadTurner hardware prototype system; conducted system evaluation and user studies on viewing range and comfort in VR/MR reclining use; contributed to manuscript writing.

### Gentune **ACM UIST 2025 Paper Accepted (22.2%)**

Toward Traceable Prompts to Improve Controllability of Image Refinement in Environment Design

Author: \*Wen-Fan Wang, \*Ting-Ying Lee, Chien-Ting Lu, **Che-Wei Hsu**, Nil Ponsa Campanyà, Yu Chen, Prof. Mike Y. Chen, Prof. Bing-Yu Chen

- Front-end implementation of the GenTune system; user study design and execution; manuscript writing; and demo presentation.

### Myo Action **ACM CHI 2026 Paper & Demo Accepted (25.3%, 21%)**

Accelerating Voluntary Actions via Electromyography and Muscle Stimulation

Author: \*Yudai Tanaka, \***Che-Wei Hsu**, Bruno Felalaga, Prof. Pedro Lopes

- Research conceptualization; system design and evaluation (reaction-time and latency analysis); implementation of EMG detection algorithms and experimental software infrastructure; development of user study software and execution of the study.

### ElderPlay **ACM DIS 2026 Under review**

Supporting Age-Inclusive Gameplay for Older Adults via Real-Time Gesture-to-Controller Translation

Author: Ching-Wen Hung, **Che-Wei Hsu**, Wei-Tang Hsu, Tzu-Chin Chiu, Li Lin, Yao-Cheng Lee, Ting-Wu Chang, Prof. Hsien-Hui Tang, Prof. Bing-Yu Chen, Prof. Mike Y. Chen

- Conceptualized the research problem of gesture-based input translation for age-inclusive gameplay; designed and implemented the ElderPlay prototype system; contributed to user study design and execution; conducted data analysis; and contributed to manuscript writing and demo preparation.

### GameFitter **ACM UIST 2026 Pre-submission**

Designing Exercise-as-Input to Turn Unmodified, Sedentary Games into Exergames

Author: Yao-Cheng Lee, Ting-Wu Chang, Chieh-Yu Wen, **Che-Wei Hsu**, Wei-Tang Hsu, Prof. Mike Y. Chen

- Provided the previously developed dual-camera gesture detection and Nintendo Switch in-game input framework; contributed to user study design and conducted system testing.

## Other Publications

### From Illusion to Integration **Workshop Paper in ACM CHI 2026, Accepted**

Muscle-Based Proprioceptive Scaffolding for Body Augmentation in Virtual Reality

Author: **Che-Wei Hsu**

- Conceptualization of proprioceptive scaffolding for VR body augmentation; design of the EMG-EMS sensorimotor training framework; literature analysis on embodiment and multisensory feedback; manuscript writing.



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## Other Projects

- **PTCGFinder** In-class Project  
Trading Card Price Tracking and Analysing Platform  

Author: **Che-Wei Hsu**, Ryan Chen, Wilson Dai

  - Designed and developed a prototype trading card comparison and tracking platform using Node.js; created an intuitive interaction workflow for card price discovery, value monitoring and collection management; currently under commercialization.

## Career Summary

- **Serelix Robotics, Taipei** 2025/09  
**R&D Intern** -2025/11
  - Analyzed feasibility for mass production of wearable assistive devices; evaluated lattice-based CAD tools for mechanical design; supported the development of assistive robotics prototypes.
- **Uchicago Human-Computer Integration Lab, Chicago** 2025/07  
**Summer Research Fellow** -2025/08
  - Finished a paper submitted to CHI with Prof. Pedro Lopes and Yudai Tanaka, done during my 8-week internship. Paper topic: Myo Action: Accelerating Voluntary Actions via Electromyography and Muscle Stimulation, accepted by top-tier conference for HCI. My contribution: Developed the prototype EMG-EMS closed-loop system that reduces human reaction time by 23 ms; implemented signal processing to filter EMS-induced noise; developed the full experimental software for the user study, including synchronized timing across multiple measurement devices to capture force-time curves; and conducted participant data analysis.
- **MEXC cryptocurrency exchange, Taipei** 2022/10  
**Intern** -2022/12
  - Supported market analysis and research for the cryptocurrency trading team; collaborated with the internship team to produce company media content and promotional videos.
- **HsinJher Culture and Education, Taipei** 2021/04  
**Tutor for science experiment** -2024/05
  - Guided students through hands-on science experiments and provided tutoring in physics and mathematics; supported instructors in managing a class of approximately 200 students.

## Awards

- National Taiwan University Hope Scholarships
- Ministry of Education Subsidy Program for Disadvantaged Students
- National Taiwan University System Beyond Borders Scholarship
- Amazon AWS DeepRacer Monthly Race Top 4 (Taiwan)

## Extracurricular Activities

- **Academic Division Member, Mechanical Engineering Student Association, NTU** 2022-2024
  - Organized academic and corporate events, including lectures, company visits, guest talks
- **President, NTU College of Engineering Student Association** 2022-2023
  - Actively advocated for student rights and regularly contributed opinions on diverse issues during meetings. 2024-2025

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## Software Skills

- AutoCAD
- Autodesk Inventor
- Autodesk Fusion
- MasterCAM X4
- Cura, PrusaSlicer
- Arduino
- Processing
- Figma

## Programming Languages

- Python
- C++
- C#
- AutoLISP
- R
- JavaScript