

Ching-Chih Amber Tsao

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RESEARCH STATEMENT

My research interests encompass **Human-centered AI**, **Human-Robot Interaction**, **Brain-Computer Interface**, and **Ubiquitous Computing**. Particularly, I focus on exploring how sensing technologies can be integrated into daily life to enhance cognitive abilities, social interactions, and user experience. Some of my recent research projects include detecting social discomfort in shared rides, developing wearable BCI devices for user authentication, and investigating user behavior and decision-making strategies through EEG analysis.

EDUCATION

Aug. 2023 – **Dual M.S. in Applied Information Science and Information Systems**
May 2025
Cornell Tech, Cornell University, USA
Connective Media Concentration, Merit-based Scholarship Recipient

Aug. 2020 – **B.S. in Management Information Systems**
Jun. 2023
National Chengchi University, Taiwan

EXPERIENCES

Jun. 2024 – **Brain-Computer Interface Lab, Academia Sinica**
Present
Research Intern, PI: *Dr. Yu-Te Wang*

- Researching on the use of **EEG** signals for **biometric authentication** [IEEE Brain Workshop]
- Developed a portable, affordable, modular **BCI headset** [SfN 24]

Jan. 2024 – **Future Automation Research Lab, Cornell University**
Present
Research Intern, PI: *Prof. Wendy Ju*

- Researching on **social discomfort** and awkward silence in share-rides

Dec. 2020 – **Human-Automation Interaction Lab, National Chengchi University, Taiwan**
Aug. 2023
EEG Team Lead / Research Assistant, PI: *Prof. Shih-Yi Chien*

- Researched on the impact of **explainable AI** on building trust in **human-generative-AI collaboration**
- Researched on the **decision-making** process in **human-robot collaboration** [HICSS-56]
- Researched on **neuromarketing** strategies in human-robot interaction [HRI'23]
- Researched on **topic modeling** the shifting research trends in the HRI fields [HRI'22]

Jul. 2022 – **Innovation R&D Department, Sinyi Realty Inc., Taiwan**
Aug. 2022
Data Analyst Summer Intern

- Developed the Address Plaque Recognition API: an **image recognition API** for collecting addresses, reduced time spent on typing addresses by 80%

PUBLICATIONS

Peer Reviewed Conference Papers

[C4] **Human-Robot Interaction in E-Commerce: The Role of Personality Traits and Chatbot Mechanisms – A Neuromarketing Research**
Yu-Wen Chang, Shih-Yi Chien, Yao-Cheng Chan, Ching-Chih Tsao (Mar. 2024)
Comp. ACM/IEEE International Conference on Human-Robot Interaction (HRI '24). Boulder, CO.

- [C3] [The Influence of a Robot Recommender System on Impulse Buying Tendency](#)
Ching-Chih Tsao, Cheng-Yi Tang, Yu-Wen Chang, Yin-Hsuan Sung, Shih-Yi Chien, Szu-Yin Lin
 (Mar. 2023)
Comp. ACM/IEEE International Conference on Human-Robot Interaction (HRI '23). 672-676. Stockholm.
- [C2] [Assessing the Decision-Making Process in Human-Robot Collaboration Using a Lego-like EEG Headset](#)
Ching-Chih Tsao, Hao-Hsiang Chuang, Tsu-Han Tsao, Cheng-Yi Tang, Yu-Wen Chang, Chih-Ling Chu, Chi-Chien Sung, Cheng-Lin Hsieh, Yuan-Pin Lin, Shih-Yi Chien (Jan. 2023)
Proc. Hawaii International Conference on System Sciences (HICSS-56). 1529-1538. Maui, HI.
- [C1] [A Machine Learning Approach to Model HRI Research Trends in 2010~2021](#)
 Chan Hsu, **Ching-Chih Tsao**, Yu-Liang Weng, Cheng-Yi Tang, Yu-Wen Chang, Yihuang Kang, Shih-Yi Chien (Mar. 2022)
Proc. ACM/IEEE International Conference on Human-Robot Interaction (HRI '22). 812-815. Online.

Under Review

- [U2] [Unveiling the Neural Signatures of Reliance in Human-Robot Collaboration: An EEG-based Machine Learning Approach](#)
Ching-Chih Tsao, Mao-Xun Huang, Sheng Hung, Jian-Jie Zheng, Yuan-Pin Lin, Shih-Yi Chien (Nov. 2024)
Under Review.
- [U1] [The Interplay of AI Attributes and Trust Dynamics in Successful Human-AI Interaction: A Neuroscientific Investigation](#)
 Shih-Yi Chien, **Ching-Chih Tsao**, Chih-Hao Ku, Sohvi Heaton (Sep. 2024)
Under Review.

Peer Reviewed Abstracts

- [A2] [Gazo: A Standalone Modularized Light-weighted BCI Device](#)
Ching-Chih Tsao, Yu-Te Wang, Yu-Lin Chu (Oct. 2024)
Neuroscience 2024 (SfN 24). Program No. LBA004.63. Chicago, IL.
- [A1] [BrainPrint: Innovative Head-Mounted EEG Technology for Secure Personal Identification](#)
 Yu-Lin Chu, **Ching-Chih Tsao**, Chi-Ming Chung, Cian-Fong Hung, Yao-Yu Lee, Jui-Bang Lu, Yang Wu, Yi-Huan Chen, Yu-Te Wang (Oct. 2024)
2024 IEEE Brain Discovery & Neurotechnology Workshop. Chicago, IL.

PATENT

Head-Mounted Device and Method for Verifying Identity based on SSVEPs
 Yu-Te Wang, Yu-Lin Chu, **Ching-Chih Tsao** (Pending, Aug. 2024).

SERVICES

Student Volunteer	Super Maker, Cornell Tech MakerLAB	2024
Teaching Assistant	Break through Tech AI Studio, Cornell University	2023
	Introduction to Computer Science, National Chengchi University	2022
Workshop Speaker	Introduction to EEG Analysis, National Chengchi University	2023
Reviewer	Alt. CHI 2023, HRI 2023	2023

Student Ambassador	Cornell Tech Student Ambassador	2023
	UNESCO Hong Kong SDGs Ambassador (Golden Merits)	2018

HONORS AND AWARDS

Conference Travel Grant – IEEE Brain, Chicago, IL, USA	2024
Conference Travel Grant – HRI'24, Boulder, CO, USA	2024
Merit-based Scholarship, Cornell University	2023 - 2024
Research Scholarship, National Science and Technology Council of Taiwan	2021 - 2023
Conference Travel Grant – HICSS-56, Maui, HI, USA	2022
Academic Excellence Award, National Chengchi University (Ranked #1/80)	2020
Best Presentation Team Award - Champion (Tertiary Division), PLAN International Hong Kong Youth Conference, "Digital Empowerment of Girls in Brazil."	2018

SKILLS

Programming Languages	Python, MATLAB, JavaScript, Java, R, Swift
Prototyping	3D Printing, Laser Cutting, CAD Modeling, ESP32, Arduino, Raspberry Pi
Tools	EEGLAB, Emotiv, TensorFlow, PyTorch, Git
Languages	English (IELTS 8.0), Mandarin