

# Ching-Chih Tsao

Taipei, Taiwan

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## RESEARCH INTERESTS

Human-Automation Collaboration, Brain Dynamics of Decision-Making, Brain-Computer Interface, Human-Centered Data Science

## EDUCATION

**National Chengchi University** *Taipei, Taiwan*

*Sep. 2020 - Jun. 2023 (Expected)*

**B.S.** Management Information Systems

**GPA:** Major: 4.13/4.3, Overall: 3.88/4.3

**Honors:** Academic Excellence Award - Fall, 2020 (Ranked #1/80)

**Selected Courses:** Data Structure (A+), Object-Oriented Programming (A+), User Experience Design (A+), CNN and Visual Recognition (A+), Business Analytics (A+), Business Data Communication (A+)

**City University Of Hong Kong** *Kowloon, Hong Kong*

*Sep. 2018 - Jun. 2020*

Information Management (Business Intelligence Stream)

Transferred to National Chengchi University due to the 2019–2020 Hong Kong protests

**Selected Courses:** Database Management (A+), Business Statistics (A)

## RESEARCH EXPERIENCE

**Human-Automation Interaction Lab, National Chengchi University**

*Dec. 2020 - Present*

**Research Assistant**, Advisor: [Shih-Yi Chien](#)

- Conducted research projects funded by the National Science and Technology Council, Taiwan
- Researching on **Factors affecting Impulsive Buying Behavior in Human-Robot Interaction**
- Researched on **Human Decision-Making Process in Human-Robot Collaboration** [\[HICSS-56\]](#)
  - Led a team of 7 fellow students to design and implement user studies
  - Studied how different levels of computational thinking ability affect the decision-making process in human-robot collaborative contexts
  - Analyzed the EEG signal and interpreted participants' behaviors
- Researched on **HRI research trends using Topic Modeling** [\[HRI'22\]](#)
  - Automated the data extraction process through web crawlers from 11 static/dynamic websites
  - Processed data cleansing and created the document-term matrix
  - Interpreted the Deep Nonnegative Autoencoder model output and discussed the shifting trends in the HRI fields over the past decade
- Researched on **Team Effectiveness in Augmented Reality Collaborative Learning Tasks** [\[TAICH'21\]](#)
  - Studied how team familiarity affects team effectiveness in AR collaborative learning tasks
  - Analyzed the data of EEG Hyperscanning to detect inter brain synchronization in the pilot test
  - Contributed to the experimental design

## PUBLICATION

- [1] **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 (2023.01). "[Assessing the Decision-Making Process in Human-Robot Collaboration Using a Lego-like EEG Headset](#)." In Proceedings of the 56th Hawaii International Conference on System Sciences (HICSS-56), pp. 1529-1538. HICSS, Hawaii.

- [2] Chan Hsu, **Ching-Chih Tsao**, Yu-Liang Weng, Cheng-Yi Tang, Yu-Wen Chang, Yihuang Kang, Shih-Yi Chien (2022.03). "[A Machine Learning Approach to Model HRI Research Trends in 2010~2021](#)." In Proceedings of the 17th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI '22), pp. 812-815. IEEE Press, Hokkaido.
- [3] **Ching-Chih Tsao**, Man-Jiun Chi, Shih-Yi Chien, Yuan-Pin Lin (2021.07). "[The Effect of Team Familiarity in Collaborative Learning Tasks: An AR+EEG Exploratory Study](#)." In Proceedings of the 7th Annual Conference of Taiwanese Association of Computer-Human Interaction (TAICHI '21), pp. 125-128. TAICHI, Taipei.

## SUBMITTED MANUSCRIPT

- [1] **Ching-Chih Tsao**, Cheng-Yi Tang, Yu-Wen Chang, Yin-Hsuan Sung, Shih-Yi Chien, Szu-Yin Lin (Under Review). "[The Influence of a Robot Recommender System on Impulse Buying Tendency](#)." The 18th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI '23).

## HONORS AND AWARDS

- **Reviewer**, HRI 2023 Late Breaking Reports, 2022
- **Conference Travel Grants**, National Chengchi University, 2022
- **Research Scholarship (Approx. 400USD/month)**, National Science and Technology Council, 2021-2022
- **Academic Excellence Award (Ranked #1/80)**, National Chengchi University, 2020
- **Sustainable Development Goals Ambassador Golden Merits**, UNESCO Hong Kong, 2018
- **Best Presentation Team Award - Champion (Tertiary Division)**, "Digital Empowerment of Girls in Brazil.", PLAN International Hong Kong Youth Conference, 2018

## TEACHING

**Department of Management Information Systems, National Chengchi University** *Sep. 2022 - Present*

**Teaching Assistant** on Introduction to Computer Science (Fall, 2022)

- Helped 50+ students debug their code
- Introduced git and front-end web development in class
- Designed homework on HTML, CSS, JavaScript

## INTERNSHIP EXPERIENCE

**Innovation R&D Department, Sinyi Realty Inc.**

*Jul. 2022 - Aug. 2022*

**Data Analyst Summer Intern**

- Developed an address plaque recognition API, which reduced time spent on typing addresses by 80%
- Adjusted the computing process of the system, raised address recognition accuracy from 50% to 83%

## SKILLS

- **Languages:** Python, Java, JavaScript, MATLAB, R, Swift
- **ML framework:** TensorFlow, Keras, Scikit-learn, Turi Create
- **Tools:** EEGLAB, Figma, Google Cloud Platform, Google Analytics, Arduino

## LANGUAGES

- Mandarin (Native)
- English (Fluent, IELTS 7.5/9.0, Oct. 2022)