Ching-Chih Tsao

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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** [HRI'23]
- 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** [TAICHI'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

[4] **Ching-Chih Tsao**, Cheng-Yi Tang, Yu-Wen Chang, Yin-Hsuan Sung, Shih-Yi Chien, Szu-Yin Lin (2023.03). "The Influence of a Robot Recommender System on Impulse Buying Tendency." In Proceedings of the 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI '23). ACM/IEEE, Stockholm.

[3] **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 2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI '22), pp. 812-815. ACM/IEEE, Hokkaido.

[1] **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.

HONORS AND AWARDS

- **Reviewer**, CHI 2023, HRI 2023 *2022-Present*
- **Research Scholarship (2,800 USD/year)**, National Science and Technology Council *2021-Present*
- **Conference Travel Grants (700 USD)**, National Chengchi University *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)