Ching-Yi Tsai

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XR Interaction, Perceptual Design, Haptics

Education

Princeton University   **New Jersey, USA**
PhD Student in Computer Science   July 2024 - to date
Advisor: Parastoo Abtahi

National Taiwan University   **Taipei, Taiwan**
M.S. in Networking and Multimedia   Sept 2020 - June 2022
Advisor: Mike Y. Chen

National Taiwan University   **Taipei, Taiwan**
B.S. in Computer Science and Information Engineering   Sept 2016 - June 2020

Research / Work Experience

National Taiwan University   **Taipei, Taiwan**
Graduate Research Assistant at NTU CPL lab   Sept 2023 - Feb 2024
Advisor: Lung Pan Cheng

Obligatory Military Service   **Kaohsiung, Taiwan**
Marine Corps   April 2023 - Augt 2023

University of Waterloo   **Ontario, Canada / Remote**
Graduate Research Assistant at Waterloo HCI lab   Nov 2022 - March 2023
Advisor: Daniel Vogel

National Taiwan University   **Taipei, Taiwan**
Graduate Research Assistant at NTU HCI lab   Sept 2022 - Nov 2022
Advisor: Mike Yen Chen

Publication

Full Paper

[C8]   Ching-Yi Tsai, Ryan Yen, Daekum Kim, Daniel Vogel **"Gait Gestures: Examining Stride and Foot Strike Variation as an Input Method While Walking"** (UIST'24)
Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (UIST'24)

[C7]   Chia-An Fan, En-Huei Wu, Chia-Yu Cheng, Yu-Cheng Chang, Alvaro Lopez, Yu Chen, Chia-Chen Chi, Yi-Sheng Chan, Ching-Yi Tsai, Mike Y. Chen **"SpinShot: Optimizing Both Physical and Perceived Force Feedback of Flywheel-Based, Directional Impact Handheld"** (UIST'24)
Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (UIST'24)

[C6]   Shun-Yu Wang, Wei-Chung Su, Serena Chen, <u>Ching-Yi Tsai</u>, Marta Misztal, Katherine M. Cheng, Alwena Lin, Yu Chen, Mike Y. Chen **"RoomDreaming: Generative-AI Approach to Facilitating Iterative, Preliminary Interior Design Exploration"**
Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI'24)

[C5]   Pin Chun Lu, Che Wei Wang, Yu Lun Hsu, Alvaro Lopez, <u>Ching-Yi Tsai</u>, Chiao-Ju Chang, Wei Tian Mireille, Mike Y. Chen **"VeeR: Exploring the Feasibility of Deliberately Designing VR Motion that Diverges from Mundane, Everyday Physical Motion to Create More Entertaining VR Experiences"**
Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI'24)

[A1]   Yi-Shuo Lin, <u>Ching Yi Tsai</u>, Lung-Pan Cheng **"Clonemator: Composing Spatiotemporal Clones to Create Interactive Automators in Virtual Reality"** *arXiv:2311.04427, Nov. 2023.*
https://doi.org/10.48550/arXiv.2311.04427

[C4]   Po-Yu Chen*, <u>Ching-Yi Tsai</u>*, Wei-Hsin Wang*, Chao-Jung Lai, Chia-An Fan, Shih Chin Lin, Chia-Chen Chi, Mike Y. Chen 2023 **"AirCharge: Amplifying Ungrounded Impact Force by Accumulating Air Propulsion Momentum"** (* equal contribution)
Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST'23)

[C3]   <u>Ching-Yi Tsai</u>, I-Lun Tsai, Chao-Jung Lai, Derrek Chow, Lauren Wei, Lung-Pan Cheng, Mike Y Chen
🏆   2022 **"AirRacket: Perceptual Design of Ungrounded, Directional Force Feedback to Improve Virtual Racket Sports Experiences"**
Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI'22)
Best Paper Award, Top 1% in all submitted papers

[C2]   Yu-Hsin Lin, Yu-Wei Wang, Pin-Sung Ku, Yun-Ting Cheng, Yuan-Chih Hsu, <u>Ching-Yi Tsai</u>, Mike Y Chen
🏆   2021 **"HapticSeer: A Multi-channel, Black-box, Platform-agnostic Approach to Detecting Video Game Events for Real-time Haptic Feedback"**
Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI'21)
Honorable Mention Award, Top 5% in all submitted papers

[C1]   Chin Guan Lim, <u>Chin Yi Tsai</u>, Mike Y Chen 2020 **"MuscleSense: Exploring Weight Sensing using Wearable Surface Electromyography (sEMG)"**
Proceedings of the Fourteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI'20)

Demo, Poster, and Extended Abstract

[E3]   <u>Ching-Yi Tsai</u>, Chen-Kuo Sun, Lung-Pan Cheng 2022 **"Garnish into Thin Air"**
🏆   *The Adjunct Publication of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22 Adjunct, Student Innovation Contest)*
People's Choice Best SIC Award

[E2]   Yu-Wei Wang, Yu-Hsin Lin, Yoko Miyatake, <u>Ching-Yi Tsai</u>, Pin-Sung Ku, Mike Y. Chen 2021 **"JetController: High-speed Ungrounded 3-DoF Force Feedback Controllers using Air Propulsion Jets"**
ACM SIGGRAPH 2021 Labs (SIGGRAPH'21 Labs)

[E1]   Yu-Wei Wang, Yu-Hsin Lin, Pin-Sung Ku, Yōko Miyatake, Po-Yu Chen, Chun-Miao Tseng, <u>Ching-Yi Tsai</u>, Mike Y Chen **"Demonstration of JetController: High-speed Ungrounded Force Feedback Controllers Using Air Propulsion Jets"**
Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI'21 EA)

Note about venues: CHI (ACM Conference on Human Factors in Computing Systems) is recognized as a very top-tier HCI conference and venue (ranked #1 on Google Scholar). The average acceptance rate for CHI is 23%.

Honor & Award

2024	**Special Recognition for Outstanding Review at ACM TEI 2024**
	  1 recognition for reviewing TEI 2024 papers
	Special Recognition for Outstanding Review at ACM DIS 2024
	  2 recognition for reviewing DIS 2024 papers

2023	**Special Recognition for Outstanding Review at ACM UIST 2023** 1 recognition for reviewing UIST 2023 papers

2022	**Best Paper Award for AirRacket [C3] at ACM CHI 2022**
	  Awarded to top 1% of all submitted papers
	Best SIC Award (People's Choice) for "Garnish into Thin Air" [E2] at ACM UIST 2022
	  Awarded to UIST22 student innovation contest group with the most audience votes.
	Special Recognition for Outstanding Review at ACM CHI 2023
	  1 recognition for reviewing CHI 2023 papers
	Highly Useful Review at ACM VRST 2023
	  1 recognition for reviewing VRST 2023 papers
	NTUEE-1975 Innovation and Entrepreneurship Awardee
	  (Institutional) Awarded to top students based on academic / industry excellence - NTD 100, 000
	Gary Marsden Travel Award
	  (International) Awarded to early researchers for SIGCHI conference opportunities. - USD 2,500
	Appier Scholarship
	  (National) Awarded to domestic researchers for top conference opportunities. - NTD 50,000

2021	**Honorable Mention Award for HapticSeer [C2] at ACM CHI 2021**
	  Awarded to top 5% of all submitted papers
	1st Place Award at Line Hackathon 2021
	  (National) Championship over 200+ teams - NTD 100, 000

2019	**Finalist at International WorldQuant Challenge** (National) Finalist at quant trading competition over 40+ teams.
2018	**Finalist at Bo-Le AI x CSR Competition** (National) Finalist for AI-based e-commerce solutions for over 50+ startup teams.

Academic Service

Program Committee Reviewing (42)	2025	**CHI-LBW**
	2025	**CHI CHI-LBW**
	2024	**UIST* CHI DIS* TEI* VRST ISS CHI-LBW**
	2023	**UIST* CHI* DIS VRST AH MobileHCI CHI-LBW**
	2022	**DIS VRST***
		(*: recognition for outstanding or highly useful review)
Host	**TAICHI'21** Co-host Online Keynote: "TAICHI x UIST- UIST Community in Taiwan"	

Invited Talk	**SIGGRAPH Asia'22** Invited to present AirRacket **[C3]** in "Best of HCI" Session	
	TAICHI'22 Presenting AirRacket **[C3]** in "SIGCHI Corridor" Session"	
	TAICHI'21 Presenting JetController **[E1]** in "Best of HCI" Session"	
Organizer	**UCCU 2021**, local UIST/CHI/CSCW/UbiComp event due to COVID-19	

Note about conferences: TAICHI is the top domestic HCI conference in Taiwan.

Teaching Experience

Teaching Assistant	**Advanced Human-Computer Interaction**	2021 Fall
	Graduate course at NTU CSIE, CSIE7644	
Teaching Assistant	**Introduction to Human-Computer Interaction and Design**	2020 Spring
	Undergraduate course at NTU CSIE, CSIE5641	

Selected Press Coverage

CTV News	"How University of Waterloo research could help you order coffee with your feet"
New Scientist	"Virtual tennis racket uses air jet to recreate feel of hitting a ball."

Skill & Others

Programming	Python, Javascript, C++, C, C#, R, HTML, CSS, Matlab.
Dev Tool	Tensorflow, Keras, Unity, Xcode, Android Studio, React, Node.js, p5.js, jQuery, Git, Arduino, Fusion360.
Design Tool	Figma, EasyEDA, Arduino, Davinci Resolve, Adobe Creative Cloud.
Hobby	Saxophone (jazz / classical), Kirigami, Jogging
Language	English, Chinese

Referee

Mike Y. Chen	**Daniel Vogel**	**Lung-Pan Cheng**
Professor	Associate Professor	Associate Professor
National Taiwan University	University of Waterloo	National Taiwan University
mikechen@csie.ntu.edu.tw	dvogel@uwaterloo.ca	lung-pan.cheng@csie.ntu.edu.tw
[C1, C2, C3, C4, C5, C6, E1, E2]	[C8]	[C3, E3, A1]