Pei-Yao Hung

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Research Interest

Human-Computer Interaction, Computer-Supported Cooperative Work,

Ubiquitous Computing, Health Informatics

Education

2012, 2022 *Ann Arbor, MI, USA*	**University of Michigan** PhD in Information Science (T.02) MS in Human-Computer Interaction Advisor:　　Mark S. Ackerman Committee: Mark W. Newman, Atul Prakash, and Florian Schaub
2006, 2008 *Taipei, Taiwan*	**National Taiwan University** MS in Computer Science and Information Engineering (T.01) BS in Computer Science and Information Engineering Advisor:　　Hao-Hua Chu Committee: Jane Yung-Jen Hsu, and Tei-Wei Kuo

Professional Experience

08/2022 – present *Ann Arbor, MI, USA*	**Institute for Social Research, University of Michigan, Software Developer** Data Science for Dynamic Intervention Decision-Making Center (d3c).
05/2021 – present *Ann Arbor, MI, USA*	**The Wearables In Reducing Risk and Enhancing Daily Lifestyle Center (WIRED-L), University of Michigan, Software Developer** Developing a mobile app for a clinical trial to examine how goal setting and just-in-time intervention could affect choices of low sodium options for individuals with heart issues.

09/2012 – 04/2022 *Ann Arbor, MI, USA*	**School of Information, University of Michigan, Research Assistant** Exploring the interaction between technology and social relationships and developing technological augmentation (e.g., digital traces analysis using Python and interactive mobile/web applications) to support people to conduct their everyday lives in the cyber and physical world. (J.01, J.03, C.02, C.04, B.01, B.02, W.03, W.04, WIP.01, WIP.02)
09/2017 – 08/2022 *Ann Arbor, MI, USA*	**Department of Epidemiology, School of Public Health, University of Michigan, Research Assistant and Developer** Exploring different design dimensions of lung cancer screening decision aid through participatory design with minority groups in Detroit and developing a multilingual online decision aid, ShouldIScreen.com. (J.02, C.03)
05/2021 – 08/2022 *Ann Arbor, MI, USA*	**Human Factors Group, University of Michigan Transportation Research Institute, Technical Development Lead** Leading the design and development effort to build a new platform for Black, Indigenous, and People of Color (BIPOC) entrepreneurs in the area of Public Interest Technology to connect and elevate their lived experience.
09/2011 – 06/2012 *Ann Arbor, MI, USA*	**School of Information, University of Michigan, Research Assistant** Designed and developed features of RePlay, a desktop application to playback sensor traces to support context-aware system design and development. (C.01, W.02)
02/2011 – 08/2011 *Ann Arbor, MI, USA*	**School of Information, University of Michigan, Developer** Revised and maintained an web-based test and questionnaire system to investigate students' awareness of security issues when using information technology.
09/2009 – 06/2010 *Taipei, Taiwan*	**Institute of Information Science, Academia Sinica, Research Assistant** Designed a storytelling platform using Adobe Actionscript for elderly to revitalize psychological functions through the process of recalling memory of the past and present.
09/2008 – 06/2009 *Hsinchu, Taiwan*	**Industrial Technology Research Institute of Taiwan, Research Intern** Investigated and utilized Wi-Fi signal patterns at crossroads to facilitate navigation system development.
07/2008 – 06/2012 *Taipei, Taiwan*	**Consulting, Web Developer** Designed and implemented features of an on-line chamber customization platform, HaisonTech.
07/2007 – 08/2007 *Taipei, Taiwan*	**Consulting, Game Programmer** Designed and programmed the game flow and interaction of two installation games to teach children about information technology and health issues in a science exhibition held by Taiwan's National Science Council.
09/2006 – 06/2008 *Taipei, Taiwan*	**National Taiwan University, Research Assistant** Designed and developed Cutting game, a computer game that facilitates in training, recording, and evaluating the visual-motor abilities of autistic children. (W.01, T.01)

Publications

Refereed Conference

C.04 **Hung, Pei-Yao**, Mark S. Ackerman (2022). Helping People to Control Their Everyday Data for Care: A Scenario-Based Study. In: *Lewy, H., Barkan, R. (eds) Pervasive Computing Technologies for Healthcare. PH 2021. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, vol 431. Springer, Cham.

C.03 **Hung, Pei-Yao**, Yan Kwan Lau, Mark S. Ackerman, Rafael Meza (2019). Designing a Web-based Decision Aid for Individuals to Consider Lung Cancer Screening. *13th EAI International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth)*, Trento, Italy, May 20–23. pp 51–60

C.02 Büyüktür, Ayse G., Mark S. Ackerman, Mark W. Newman, **Pei-Yao Hung** (2017). Design Considerations for Semi-Automated Tracking: Self-Care Plans in Spinal Cord Injury. *11th EAI International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth)*, Barcelona, Spain, May 23–26. pp 183–192

C.01 Chang, Yung-Ju, **Pei-Yao Hung**, Mark W. Newman (2012). TraceViz: 'Brushing' for Location Based Services. *ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI)*, San Francisco, CA, USA, September 21–24. pp 345–348

Journal Articles

J.03 **Hung, Pei-Yao**, Drew Canada, Michelle A. Meade, and Mark S. Ackerman (2022). Data Checkers: A Grid-Based UI for Managing Patient-Generated Data Sharing to Support Collaborative Self-Care. *Frontiers in Computer Science*, Volume 3, 2022.

J.02 Lau, Yan Kwan, Harihar Bhattarai, Tanner J. Caverly, **Pei-Yao Hung**, Evelyn Jimenez-Mendoza, Minal R. Patel, Michele L. Coté, Douglas A. Arenberg, Rafael Meza (2021). Lung Cancer Screening Knowledge, Perceptions, and Decision Making Among African Americans in Detroit, Michigan. *American Journal of Preventive Medicine*, Volume 60, Issue 1, January 2021, Pages e1-e8.

J.01 Büyüktür, Ayse G., **Pei-Yao Hung**, Mark S. Ackerman, Mark W. Newman (2018). Supporting Collaboratively Constructed Independence: A Study of Spinal Cord Injury. *Journal Proceedings of the ACM on Human-Computer Interaction - CSCW*, Volume 2 Issue CSCW, November 2018, Article No. 26.

Book Chapter

B.02 Ackerman, Mark S., Ayse G. Büyüktür, **Pei-Yao Hung**, Michelle Meade, Mark W. Newman (2017). Sociotechnical Design for the Care of People with Spinal Cord Injuries, in *Designing Healthcare That Works: A Sociotechnical Approach*, Ackerman, Mark, A., Michael Prilla, Christian Stary, Thomas Herrmann, Sean Goggins (eds.), Academic Press, 2017.

B.01 Merrit, David, **Pei-Yao Hung**, Mark S. Ackerman (2016). Expertise Finding: A Socio-Technical Design Space Analysis, in *Expertise, Communication, and Organizing*, Treem, Jeffrey and Paul Leonardi (eds.), Oxford University Press, 2016.

Refereed Workshop & Doctoral Consortium

W.04 **Hung, Pei-Yao**, Mark S. Ackerman (2019). Supporting Care Teams with Participatory Governance over Data Sharing. Who Cares? Exploring the Concept of Care Networks for Designing Healthcare Technologies Workshop, *The 17th European Conference on Computer-Supported Cooperative Work (ECSCW)*, June 8, Salzburg, Austria.

W.03 Kaziunas, Elizabeth, **Pei-Yao Hung**, Mark S. Ackerman (2014). FIT2: Information Translations for Health Practices. International Workshop on Collaboration and Co-ordination in the Context of Informal Care (CCCiC), ACM *Conference on Supporting Groupwork (GROUP)*, November 9, Sanibel Island, FL, USA.

W.02 Chang, Yung-Ju, Mark W. Newman, **Pei-Yao Hung**, Manchul Han (2013). Integrating Capture & Playback into Context-Aware Systems Development. International Symposium of Chinese (ChineseCHI), ACM *Conference on Human Factors in Computing Systems (CHI)*, April 28, Paris, France.

W.01 **Hung, Pei-Yao**, Jin-Ling Lo, Hsin-Yen Wang, Hao-Hua Chu, Ya-Lin Hsieh (2009). CuttingGame: A Computer Game to Assess & Train the Visual-motor Integration Ability for Preschool Children with Autism. Interactive Creative Play with Disabled Children Workshop, ACM *SIGCHI Interaction Design and Children (IDC)*, June 3, Como, Italy.

Work In Progress

WIP.02 Merrit, David, Mark W. Newman, **Pei-Yao Hung**, Mark S. Ackerman, Erica Ackerman (2015) Using Expertise for Crowd-sourcing. *AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, San Diego, USA, November 8–11.

WIP.01 **Hung, Pei-Yao**, Mark S. Ackerman (2015) Discount Expertise Metrics for Augmenting Community Interaction. ACM *International Conference on Communities and Technologies (C&T)*, Limerick, Ireland, June 27–30.

Thesis and Dissertation

T.02 **Hung, Pei-Yao** (2022). Designing System Support for Sharing Everyday Data for Chronic Care. *UMich PhD Dissertation*, Ann Arbor, Michigan, USA.

T.01 **Hung, Pei-Yao** (2008). A Computer Cutting Game to Train Hand Function for Children. *NTU MS Thesis*, Taipei, Taiwan, August.

Awards

Fall 2010 **University of Michigan Mobile Apps Challenge Runner-Up**
Designed a mobile application that manages personal emotions, with the goal of helping users reflect on their emotions and be aware of others' emotions. In collaboration with Ying-Yu Chen.

Winter 2010 **University of Michigan iDesign Competition Second Place**
Designed visualizations to create a new browsing interface for University Library's music collection. In collaboration with Gin L Chieng, Pei-Chih (Bell) Shih, Sylvia Szu-Hsuan Lai, and Yi-Ying Lin.

Presentations

11/18/2021 **Public Interest Technology Knowledge Network Kick-Off**
Ann Arbor, MI, USA Mainstreaming the embodied knowledge and lived experiences of BIPOC PIT Practitioners

01/30/2019 **Privacy@Michigan - Celebrating International Data Privacy Day**
Ann Arbor, MI, USA [Poster] Empowering Patients to Share Patient-Generated Data through a Grid-Based User Interface

01/30/2018 **Privacy@Michigan - Celebrating International Data Privacy Day**
Ann Arbor, MI, USA [Poster] Enable Control and Monitoring of IoT Data Sharing to Support Chronic Care

10/19/2017 **State of Science conference - Facilitating Health Self-Management and Indepen-**
Arlington, VA, USA **dence among adolescents and Young Adults with Disabilities: The Development, Efficacy, Integration, & Sustainability of Mobile Technology to Support the Transition Process**
[Showcase] Sensible Care: using Internet of Things (IoT) data to support collaborative care with sensing and mobile technology

09/02/2017 **Michigan Taiwanese Student Association (MTSA) Orientation**
Ann Arbor, Michigan, English Learning Resources at the University of Michigan
USA

08/05/2017 **Sharing Salon at National Tsing Hua University**
Hsinchu, Taiwan Reflection on Multidisciplinary Research Experience

07/16/2016 **National Tsing Hua University Institute of Information Systems and Applica-**
Hsinchu, Taiwan **tions**
Discount Expertise Metrics for Augmenting Community Interaction

06/06/2012 **National Chengchi University Department of Computer Science**
Taipei, Taiwan HCI Program and Research at the University of Michigan School of Information

05/13/2011 **National Taiwan University Department of Computer Science & Information**
Taipei, Taiwan **Engineering, Intelligent Agents Lab**
Contextual Design Process Experience Sharing

Training & Certification

06/01/2017 **Certificate of Completion, Preparing Future Faculty Seminar**
University of Michigan

Service

Program Committee

Taiwan Computer-Human Interaction Conference (Tai-CHI)

Poster Chair, Taiwan Computer-Human Interaction Conference (Tai-CHI)

Peer Reviewing

ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)

ACM SIGCHI Conference on Designing Interactive Systems (DIS)

ACM Conference on Human Factors in Computing Systems (CHI)

ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI)

Taiwan Computer-Human Interaction Conference (Tai-CHI)

Other

ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) student volunteer

Michigan Interactive and Social Computing (MISC) student organizer

University of Michigan School of Information Doctoral Executive Committee (DEC) officer

Teaching

01/2021 – 04/2021 *University of Michigan*	**Graduate Student Instructor – Programs, Information and People** Develop education content for e-textbook to introduce Python programming knowledge, lead two weekly discussion sections with 25+ students to review fundamental programming concepts, and host office hours to provide one-on-one tutoring.
09/2020 – 12/2020 *University of Michigan*	**Graduate Student Instructor – User Interface Development** Assist with teaching a remote undergraduate Computer Science course with 360+ students across different time zones, serve as the bridge between instructional aides and faculty instructors to ensure the smooth operation of the class, design homework for students to apply User Interface Development concepts using HTML/CSS/Javascript/Vue.js, manage study groups to facilitate peer learning among students with different skill sets, record demonstration videos to guide students on homework and materials, and answer questions on Piazza (crowd-sourcing QA system) to encourage continuous discussion outside of lecture.

01/2020 – 04/2020 *University of Michigan*	**Graduate Student Instructor – UX Field Research** Gave a guest lecture to examine a case study applying participatory design, held office hours weekly to provide need-based assistance, and provided feedback on students' UX research plans for applying different methods (e.g., interview, survey, participatory design) to sharpen their research planning skills.
09/2019 – 12/2019 *University of Michigan*	**Graduate Student Instructor – Programming I (Python)** Led 2 weekly lab sessions (20+ master students per session) to examine important programming concepts and provided one on one instructions, held office hours weekly to provide need-based assistance, answered questions during in-lecture learning activities, used online platform Piazza to facilitate continuous student engagement, constructed a wiki to provide structural learning guidance, held learning clinic to provide group-based discussion and feedback about learning strategies, and participated in a panel on problem-solving to share and discuss good programming practices.
01/2015 – 04/2015 *University of Michigan*	**Graduate Student Instructor – Introduction to Information Studies** Led 3 weekly discussion session (above 15 students per session) to examine course topics, taught a 1.5 hours lecture in Human-Computer Interaction (HCI) with 240 undergraduate students, designed 2 weekly lesson plans as the guidance for other instructors, and graded response papers and visualization projects to improve students' writing and visual presentations.
09/2014 – 12/2014 *University of Michigan*	**Graduate Student Instructor – Networked computing: Storage, Communication and Processing (Python)** Developed and led 3 weekly lab sessions (above 15 master students per session) to examine important programming and computer concepts using Python and provided one on one instructions, graded programming assignments to provide feedback about the design and implementation of homework solutions, and held office hours weekly to answer additional questions.
08/11/201 *National Taiwan* *University*	**Instructor – Workshop on How to Organize and Do a Presentation** Presented a lecture on organizing a presentation in a problem-solution format, and led a workshop to guide students to practice an impromptu presentation.
July 2009 *National Taiwan* *University*	**Instructor – Adobe Flex/Flash Prototyping Crash Course** Designed lecture, prepared sample code, delivered a 2 hours training course to introduce the fundamental concepts required for prototyping in Adobe Flex/Flash for the Intelligent Agent lab as part of its orientation.
January 2009 *National Taiwan* *University*	**Instructor – Object Oriented Programming using C#** Developed syllabus, wrote lectures, created projects, presented, and graded,successfully facilitated understanding of programming, resulting in 5 students with no technology background developing a simple calculator with a graphic user interface in ten days.
Fall 2006 *National Taiwan* *University*	**Teaching Assistant – Database Systems** Graded assignments and held weekly office hours to answer students' questions.

Students Supervised and Mentored

09/2021 – present
University of Michigan

An undergraduate student conducting human-centered research
Provided instructions and feedback on human-centered design research process to continue the development of a lung cancer screening decision aid, ShouldIScreen.com.

05/2021 – 08/2021
University of Michigan

A graduate student working as a UX researcher and designer
Provided feedback and guidance on UX research instrument design and data analysis to understand and design a new platform for Black, Indigenous, and People of Color (BIPOC) entrepreneurs in the field of Public Interest Technology (PIT).

07/2017 – 08/2017
University of Michigan

An undergraduate student with disability who uses his experience to design mobile application to support self-care at home
Introduced the concept of user-centered design, designed readings and homework, provided feedback on deliverables, facilitated brainstorming

09/2015 – 05/2016
University of Michigan

A team with 5 master students who became CHI 2016 Student Design Competition Finalist
Guided analysis of interview data, provided critique of findings and design recommendations, suggested writing revisions and polished presentation flow.
See "Dot-it: Managing Nausea and Vomiting for A Peaceful Pregnancy with Personal Pattern Exploration" in ACM Digital Library.

Summer 2009
National Taiwan
University

A team with 6 undergrad students who received the Best Experience Award at the 1st annual OpenHCI workshop
Mentored the learning and practicing of design thinking methods to identify problems and brainstorm a solution to streamline the dining experience in a university cafeteria.

Academic and Professional Society

ACM Student, ACM SigCHI, SigCHI Taipei Chapter, Taiwan Medical Design Association