

Pei-Yao Hung

RESEARCH DEVELOPER

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Summary

- Experience (post-undergrad): 16+ years programming, 10+ years user experience (UX) research involving system building
- Skills: JavaScript, React/Angular/Vue/Next.js, Node.js, ReactNative, Python, PHP, SQL, NoSQL, HTML, CSS, R, Git, Jira
- Collaborators: installation artists, visual designers, occupational therapists, epidemiologists, pharmacists, applied mathematicians, physicians, caregivers, and patients

Selected Work Experience (more)

Software Developer

US

Institute for Social Research, University of Michigan

Aug. 2022 - Present

- Develop software framework using **Node.js**, **React**, **ReactNative**, and **MongoDB** to support mobile health solutions for delivering just-in-time adaptive interventions (JITAs).
- Apply **agile** project management using **Jira** to collaborate with researchers, developers and an RL engineer.

Software Developer (Consultant) (project)

US

Fred Hutchinson Cancer Center

Apr. 2022 - Jan. 2023

- Collaborated with applied mathematicians to design and develop a web-based simulation tool ([Covid19Vaxplorer](#)) for health officials to compare the effectiveness of vaccine allocation strategies.
- Applied **card-sorting** to develop **information architecture** for organizing 191 parameters to create a user-friendly UI.
- Developed a web app using **Vue.js** and use **Flask** to connect the user interface and the simulation model.

Software Development Lead

US

The Wearables In Reducing Risk and Enhancing Daily Lifestyle Center (WIRED-L), University of Michigan

May 2021 - Jan. 2023

- Collaborated with CareEvolution, Inc and utilize its framework to develop a cross-platform **mobile app** with dashboards and just-in-time notifications using **Angular** for a clinical trial (N=600) funded by the American Heart Association.
- Developed a backend architecture on **Google Cloud Platform** using **Node.js** to support account management, study progress monitoring, **Fitbit** data retrieval, SMS scheduling and delivery (**Twilio**).

Technical Lead (project)

US

College of Engineering, University of Michigan

May 2021 - Aug. 2022

- Led a team to develop an **online knowledge-sharing platform**, [Braid](#), using **Next.js** on **Google Cloud Platform** to connect Black, Indigenous, and People of Color (BIPOC) entrepreneurs in the field of Public Interest Technology.
- Mentored junior developers through curating learning materials, drafting templates, and **code review**.

Software Developer & Researcher (project)

US

School of Public Health, University of Michigan

May. 2017 - Aug. 2022

- Trained epidemiologists to use **Git** to collaboratively develop a responsive multilingual **decision aid**, [ShouldIScreen](#) (~9K visits/week) using **React/PHP/MySQL/Apache**, for patients to explore critical **cancer screening decisions**.
- Applied **A/B testing** for design refinement, and mentor an undergrad developer to realize user-friendly features.

Education

2012, 2022 **MS & PhD in Information Science (Human-Computer Interaction)**, University of Michigan, Ann Arbor

US

2006, 2008 **BS & MS in Computer Science and Information Engineering**, National Taiwan University

Taiwan

Selected Mentorship & Teaching Experience

University of Michigan, Ann Arbor

US

Graduate Student Instructor – User Interface Development

2020

- Ensured the smooth operation of a remote Computer Science course with 360+ students across different time zones.
- Designed homework for students to apply User Interface Development concepts using **HTML/CSS/Javascript**.

University of Michigan, Ann Arbor

US

Graduate Student Instructor – Programming I (Python)

2019

- Led weekly lab sessions (40+ master students) and office hours to examine important **Python** programming concepts.
- Participated in a panel on problem-solving to share and discuss good **programming practices**.

National Taiwan University

Taiwan

Instructor – Adobe Flex/Flash/ActionScript Prototyping Crash Course

2009

- Lectured 20+ students the fundamental concepts required for **rapid prototyping** using **Adobe Flex/Flash/ActionScript**.

National Taiwan University

Taiwan

Instructor – Object Oriented Programming using C#

Winter, 2009

- 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 graphic user interface in ten days using **C#**.

Selected Presentations

[Poster] JustIn: Software framework for effective and implementable just-in-time adaptive interventions

US

CATIE: The Comprehensive Program for Adaptive Interventions Training in Education

02/21/2024

[Demonstration] Sensible Care: using Internet of Things (IoT) data to support collaborative care with sensing and mobile technology

US

State of Science conference - Facilitating Health Self-Management and Independence among Adolescents and Young Adults with Disabilities

10/19/2017

Selected Publications

Data Checkers: A Grid-Based UI for Managing Patient-Generated Data Sharing to Support Collaborative Self-Care

Frontiers

Hung, Pei-Yao, Drew Canada, Michelle A. Meade, and Mark S. Ackerman

2022

Designing a Web-based Decision Aid for Individuals to Consider Lung Cancer Screening

PervasiveHealth

Hung, Pei-Yao, Yan Kwan Lau, Mark S. Ackerman, Rafael Meza

2019

Certification & Training

2020 **Inferential Statistical Analysis with Python**, University of Michigan, Ann Arbor

Coursera

2020 **Understanding and Visualizing Data with Python**, University of Michigan, Ann Arbor

Coursera

2017 **Preparing Future Faculty Seminar**, University of Michigan, Ann Arbor

US

2016 **Front-End JavaScript Frameworks: AngularJS**, The Hong Kong University of Science and Technology

Coursera

2013 **Introduction to Data Science**, University of Washington

Coursera