

Yuwen Lu

PhD Student (Second Year), University of Notre Dame

ylu23@nd.edu | yuwen.io | Twitter @yuwen_lu_

RESEARCH INTERESTS

Human-Computer Interaction (HCI), Human-AI Collaboration, User Experience (UX), Design, End-User Empowerment

EDUCATION

University of Notre Dame

Notre Dame, IN

Ph.D. student (2nd year), Computer Science and Engineering

Aug 2021 – May 2026 (expected)

Research focus: Designing and building multi-modal AI-infused systems to support UX design

Advisor: Dr. Toby Jia-Jun Li

Carnegie Mellon University

Pittsburgh, PA

Master's, Human-Computer Interaction (MHCI)

Aug 2020 – Aug 2021

Human-Computer Interaction Institute, School of Computer Science

Capstone: Redesign of *ApplyGrad*, the graduate application portal for the School of Computer Science ([website](#))

Advisors: Dr. Geoff Kaufman, Dr. Nikolas Martelaro, Dr. Motahhare Eslami

Dalian University of Technology

Dalian, China

B.Eng in Software Engineering

Sep. 2016 – June 2020

Study abroad: University of California, Irvine (advisors: Dr. Gloria Mark, Dr. Alex Williams), Technical University of Munich (advisors: Dr. Juan Haladjian, Dr. Bernd Brügge)

RESEARCH EXPERIENCE

Building AI-Enabled Design Support Tools for UX Practitioners with LLMs

Aug 2021 – Present

Lead Researcher, team of 5

Notre Dame, IN

- Investigating the human-AI co-creation with generative models in the context of user experience (UX) design
- Testing out an approach of using Chain of Thought on large language models (LLMs) for conditional UI layout generation
- Developing a Transformer-based, explainable UI layout generation model with the *RICO* UI dataset using Python
- Conducted 8 one-hour interviews with UX practitioners to identify their needs with AI-enabled design support tools
- Published a CHI Late-Breaking Work paper, presented at CHI 2022 (paper [3])
- Co-organized a CHI 2022 workshop with around 50 participants on *computational methods for user interfaces* (paper [4])
- Presented this work as a guest speaker to the Material Design group at Google virtually in August 2022

Bridging AI Inequality in Digitally-Mediated Gig Work

Aug 2021 – Present

Lead Researcher, team of 5

Notre Dame, IN

- Leading a team of 3 students to develop an app, CREPE, that enables data collection from research participants' screens
- Working with community partners, e.g. *Chicago Gig Alliance*, to understand gig workers' unique challenges and needs
- Analyzing a *Chicago rideshare dataset (275M trips)* with Python to understand the landscape of digitally-mediated gig work
- Planning to build AI-Enabled intelligent assistants that are owned and programmed by gig workers to support their work

End-User Empowerment Against Design Dark Patterns Through Malleable Interfaces

May 2022 – Present

Lead Researcher, team of 5

Notre Dame, IN

- Designed a technology probe that supports end users in changing design dark patterns on website interfaces with Figma
- Implemented the probe in the form of a browser extension using Vue.js, Tailwind CSS, and Google Firebase
- Organized 5 in-person co-design workshops to understand users' needs and expectations for dark pattern intervention
- Conducted a 2-week probe deployment study with 15 users to understand real-life, in-situ reaction to our approach
- Paper submitted to CSCW 2023 (paper [1])

PUBLICATIONS

[1] From Design Transparency to Malleable Interfaces: Exploring End-User Personalization for Website Design Dark Patterns

Yuwen Lu*, Chao Zhang*, Yuewen Yang, Yaxing Yao, Toby Jia-Jun Li (* equal contribution)

Submitted to CSCW 23

[2] A Bottom-Up End-User Intelligent Assistant Approach to Empower Gig Workers against AI Inequality

Toby Jia-Jun Li, **Yuwen Lu**, Jaylexia Clark, Meng Chen, Victor Cox, Meng Jiang, Yang Yang, Tamara Kay, Danielle Wood, Jay Brockman

The Symposium on Human-Computer Interaction for Work (CHIWORK 22)

[3] Bridging the Gap Between UX Practitioners' Work Practices and AI-Enabled Design Support Tools

Yuwen Lu, Chengzhi Zhang, Iris Zhang, and Toby Jia-Jun Li

Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI EA '22)

[4] Computational Approaches for Understanding, Generating, and Adapting User Interfaces

Yue Jiang*, **Yuwen Lu***, Jeffrey Nichols, Wolfgang Stuerzlinger, Chun Yu, Christof Lutteroth, Yang Li, Ranjitha Kumar, Toby Jia-Jun Li (* equal contribution)

Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI EA '22)

[5] Characterizing Work-Life for Information Work on Mars: A Design Fiction for the New Future of Work on Earth

Rhema Linder, Chase Hunter, Jacob McLemore, Senjuti Dutta, Fatema Akbar, Ted Grover, Thomas Breideband, Judith W Borghouts, **Yuwen Lu**, Gloria Mark, Austin Z Henley, Alex C Williams

Proceedings of the ACM on Human-Computer Interaction 6 (GROUP) 2022

[6] The Social Amplification and Attenuation of COVID-19 Risk Perception Shaping Mask Wearing Behavior: A Longitudinal Twitter Analysis

Suellen Hopfer, Emilia J Fields, **Yuwen Lu**, Ganesh Ramakrishnan, Ted Grover, Quishi Bai, Yicong Huang, Chen Li, Gloria Mark

PloS ONE, 2021

AWARDS & HONORS

Lucy Scholars Fellowship, <i>Lucy Family Insitute for Data & Society, University of Notre Dame</i>	2022–2024
Graduate School Professional Development Awards (GSPDA), <i>University of Notre Dame</i>	2022
Conference Presentation Grant, <i>University of Notre Dame</i>	2022
Academic Excellence Scholarship & Tech Innovation Scholarship, <i>Dalian University of Technology</i>	2017
National Scholarship (top merit-based scholarship for undergraduate students in China)	2017

COMMUNITY LEADERSHIP & SERVICE

Graduate Student Mentor

Sprint 2022

Graduate Guidance Mentorship Program, for undergraduate students interested in academic research

Notre Dame, IN

Conference Reviewer

Jan 2022

CSCW 2022, CHI 2023

Workshop Organizer & Reviewer

Feb 2022

Computational Approaches for Understanding, Generating, and Adapting User Interfaces at CHI 2022

New Orleans, LA

Student Volunteer

UIST 2021, IUI 2022

TEACHING EXPERIENCE

Guest Lecture

Fall 2021, Fall 2023

Figma Tutorial for CSE 40424 - Human Computer Interaction

University of Notre Dame

Teaching Assistant

Spring 2022

CSE 44424 Human Computer Interaction, CSE 40655 Technical Concepts of Visual Effects

University of Notre Dame

Teaching Assistant

Fall 2021

CSE 30331/CSE 34331 Data Structures

University of Notre Dame