

Yuwen Lu

PhD Student (Second Year), University of Notre Dame

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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 – Present

Expected Graduation: May 2026

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

University of California, Irvine

Irvine, CA

Undergraduate Study Abroad

Jan 2020 – Aug 2020

Department of Informatics, Donald Bren School of Information & Computer Sciences

Advisors: Dr. Gloria Mark, Dr. Alex Williams

Technical University of Munich

Munich, Germany

Undergraduate Study Abroad

Apr 2019 – Aug 2019

Department of Informatics

Capston (Praktikum): Design & development of a goalkeeper trainer iOS app, in collaboration with Oliver Kahn's *Goalplay*

Advisors: Dr. Juan Haladjian, Dr. Bernd Brügge

Dalian University of Technology

Dalian, China

B.Eng in Software Engineering

Sep. 2016 – June 2020

School of Software

RESEARCH EXPERIENCE

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 in submission to CHI 23 (paper [1])

Building AI-Enabled Design Support Tools for UX Practitioners

Aug 2021 – Present

Lead Researcher, team of 5

Notre Dame, IN

- Investigating the integration of machine learning models into UX practitioners' existing workflow
- Developing a grammar-based, statistical UI layout generation model with a large UI dataset *RICO* 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

Modernizing the Design of CMU Graduate Application Review System *ApplyGrad*

Jan 2021 – Aug 2021

Technical Lead, UX Researcher, team of 5

Pittsburgh, PA

- Worked on improving the UX of the ApplyGrad application review system for CMU School of Computer Science
- Conducted research with application reviewers using contextual inquiry, expert interviews, affinity diagramming, etc.
- Investigated reviewers' concerns and potential fairness issues of integrating AI into the application review process
- Created Figma prototypes of the envisioned review experience for graduate application reviewers

Qualitative Analysis of COVID-19 Mask Perception Twitter Discussions

Jan 2021 – Aug 2021

Student Researcher, team of 4

Irvine, CA

- Contributed to 3 rounds of qualitative coding on 7,024 mask tweets in 2020 to analyze people's risk perception
- Led in analyzing and visualizing our Tweet dataset and labeling results using Python and Pandas
- Contributed to our codebook with 6 themes uncovering how mask tweets amplified and attenuated COVID-19 risk

PUBLICATIONS

[1] From Design Transparency to Malleable Interfaces: Exploring End-User Interventions for Dark Patterns in UX

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

In submission to CHI 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 Insititute 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 scholarship for undergraduate students in China)	2017

COMMUNITY LEADERSHIP & SERVICE

Graduate Student Mentor	Sprint 2022
<i>Graduate Guidance Mentorship Program</i>	<i>Notre Dame, IN</i>
<ul style="list-style-type: none">Met weekly with undergraduate mentees in Computer Science and NeuroscienceProvided tips, suggestions, and resources on academic research and graduate school application	
Conference Reviewer	Jan 2022
<i>CSCW 2022, CHI 2023</i>	
Workshop Organizer & Reviewer	Feb 2022
<i>Computational Approaches for Understanding, Generating, and Adapting User Interfaces at CHI 2022</i>	<i>New Orleans, LA</i>
Student Volunteer	
<i>UIST 2021, IUI 2022</i>	

TEACHING EXPERIENCE

Teaching Assistant	Spring 2022
<i>CSE 44424 Human Computer Interaction, CSE 40655 Technical Concepts of Visual Effects</i>	<i>University of Notre Dame</i>
Guest Lecture	Fall 2021
<i>Figma Tutorial for CSE 40424 - Human Computer Interaction</i>	<i>University of Notre Dame</i>
Teaching Assistant	Fall 2021
<i>CSE 30331/CSE 34331 Data Structures</i>	<i>University of Notre Dame</i>