

Yuwen Lu

PhD Student, University of Notre Dame (3rd Year)

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

RESEARCH INTERESTS

Human-Computer Interaction (HCI), Human-Centered AI, UI/UX Design Support

EDUCATION

University of Notre Dame

Notre Dame, IN

Ph.D. student, Computer Science and Engineering

Aug 2021 – May 2026 (expected)

Current research focus: Incorporating Large Language Models and Text-to-Image Models into UI/UX design support

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](#))

Collaborated with Dr. Geoff Kaufman, Dr. Nikolas Martelaro, Dr. Motahhare Eslami on research projects

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)

WORK EXPERIENCE

Google

Cambridge, MA

Student Researcher, Material Design Team

July – Dec 2023

Explored AI integration in designer tools, with a focus on design systems and large language models (LLMs)

Submitted a Case Study paper to CHI 2024 [1]

Mentors: Tiffany Kneareem, Clara Kliman-Silver, Frank Bentley

SELECTED PUBLICATIONS

[1] AI Is Not Enough: A Hybrid Technical Approach to AI Adoption in UI Linting With Heuristics

Yuwen Lu, Tiffany Kneareem, Shona Dutta, Jamie Blass, Clara Kliman-Silver, Frank Bentley

In submission to the 2024 CHI Conference on Human Factors in Computing Systems, Case Studies Track (CHI 2024, Case Studies)

[2] AI Assistance for UX: A Literature Review Through the Lens of Human-Centered AI

Yuwen Lu, Yuewen Yang, Qinyi Zhao, Chengzhi Zhang, Toby Jia-Jun Li

In Submission

[3] Exploring Mobile UI Layout Generation using Large Language Models Guided by UI Grammar

Yuwen Lu, Ziang Tong, Qinyi Zhao, Chengzhi Zhao, Toby Jia-Jun Li

ICML 2023 Workshop on Artificial Intelligence and Human-Computer Interaction

- [4] **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)
The 26th ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW 2024)
- [5] **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 2022)
- [6] **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 2022)
- [7] **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 2022)

RESEARCH EXPERIENCE

Incorporating LLMs into UX Design Support

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
- Building a pipeline using GPT-4 for conditional UI layout generation and completion (workshop paper [3])
- Published a Late-Breaking Work paper on needfinding of AI design support tools, presented at CHI 2022 (paper [6])
- Co-organized two CHI workshops (2022 and 2023) with around 50 participants on *computational methods for user interfaces* (paper [7])

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 accepted to CSCW 2024 (paper [3])

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 merit-based scholarship for undergraduate students in China)	2017

COMMUNITY LEADERSHIP & SERVICE

Workshop Organizer & Reviewer

2022 & 2023

Computational Approaches for Understanding, Generating, and Adapting User Interfaces at CHI 2022 *New Orleans & Hamburg*

Conference Reviewer

CSCW 2022 & 2024, CHI 2023 & 2024, DIS 2023, SIGGRAPH 2023, CUI 2023

Student Volunteer

UIST 2021 & 2023, IUI 2022

Graduate Student Mentor

Spring 2022

Graduate Guidance Mentorship Program, for undergraduate students interested in academic research *Notre Dame, IN*

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*