Yuwen Lu

PhD Student, University of Notre Dame

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

RESEARCH INTERESTS

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

EDUCATION

University of Notre Dame   Notre Dame, IN

Ph.D. Student, Computer Science and Engineering   *Aug 2021 – Present*

Expected Graduation: May 2026

Advisor: 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: Geoff Kaufman, Nikolas Martelaro, 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: Gloria Mark, 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: Juan Haladjian, 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 and built a technology probe that supports end users in changing design dark patterns on website interfaces

- 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 6   *Notre Dame, IN*

- Focusing on using state-of-the-art machine learning models to support UX practitioners' work
- Co-organized a CHI 2022 workshop with around 50 participants on *computational methods for user interfaces*
- 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, to be presented at CHI 2022 (paper [3])

Bridging AI Inequality in Digitally-Mediated Gig Work   Aug 2021 – Present

Lead Researcher   *Notre Dame, IN*

- Collecting, analyzing data collected from gig workers to discover inequality in Digitally-Mediated Gig Work
- Building AI-Enabled intelligent assistants that are owned and programmed by gig workers to support their work
- Leading a team of 3 students to develop an app, Crepe, that enables data collection from research participants' phones
- Working with community partners, e.g. *Chicago Gig Alliance*, to understand gig workers' unique challenges and needs
- Presented two posters, for the proposed systems Crepe and Sausage, at the Lucy Symposium in 2021

Modernizing the Design of CMU Graduate Application Review System *ApplyGrad*   Jan 2021 – Aug 2021

Technical Lead   *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

Researcher   *Irvine, CA*

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

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, *Lucy Family Insititute for Data & Society, University of Notre Dame*	2022–2024
Graduate School Professional Development Awards (GSPDA), *University of Notre Dame*	2022
Conference Presentation Grant, *University of Notre Dame*	2022
Academic Excellence Scholarship, *Dalian University of Technology*	2017
Tech Innovation Scholarship, *Dalian University of Technology*	2017
National Scholarship (top scholarship for undergraduate students in China)	2017

COMMUNITY LEADERSHIP & SERVICE

Mentor   Feb 2022 - Present

Graduate Guidance Mentorship Program   *Notre Dame, IN*

- Meeting weekly with undergraduate mentees Meng Chen (Computer Science) and Allie Wu (Neuroscience)
- Providing tips, suggestions, and resources on academic research and graduate school application

Conference Reviewer   Jan 2022

The 25th ACM Conference On Computer- Supported Cooperative Work And Social Computing (CSCW)   *Online Remote*

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

President   July 2018 – Jan 2019

IBM Student Club, Dalian University of Technology   *Dalian, China*

- Organized a series of tech salons, inviting IBM professionals to teach design thinking and latest tech advancements
- Arranged a hackathon for college students to use IBM Watson to build real-world applications
- Helped club members participate in regional and national technological competitions organized by IBM

- Coordinated company visits to IBM Dalian for club member students
- Received **Best Student Club Award** in 2018 from IBM China, as the only recipient in the nation

President   July 2017 – June 2018

Model United Nations (MUN) Association, Dalian University of Technology EDA Campus   *Dalian, China*

- Organized a regional MUN conference, *Dalian Yangfan MUN*, with over 100 participants from 5 local universities
- Hosted weekly training sessions to improve association members' public speaking, document writing, and research skills
- Coordinated delegations of association members to attend regional, national, and international MUN conferences

Teaching Experience

Teaching Assistant   Spring 2022

CSE 44424 Human Computer Interaction (remote, London Campus)   *University of Notre Dame*

Teaching Assistant   Spring 2022

CSE 40655 Technical Concepts of Visual Effects   *University of Notre Dame*

Guest Lecture   Fall 2021

Figma Tutorial for CSE 40424 - Human Computer Interaction   *University of Notre Dame*

Teaching Assistant   Fall 2021

CSE 30331/CSE 34331 Data Structures   *University of Notre Dame*