# Meng Chen

*Curriculum Vitae*

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18290 Dunn Rd APT 3106, South Bend, IN 46637

## RESEARCH INTERESTS

Human-Computer Interaction (HCI), Human-AI Collaboration, Creativity Support Tools

## EDUCATION

| | | |
|---|---|---|
| 8/2024-current | **University of Texas at Austin** | Austin, TX |
| | Ph.D. in Computer Science | |
| | Department of Computer Science, College of Natural Science | |
| | Advisor: Amy Pavel | |
| 8/2020-5/2024 | **University of Notre Dame** | Notre Dame, IN |
| | B.S. in Computer Science; Philosophy | |
| | Department of Computer Science and Engineering, College of Engineering | |
| | Advisor: Toby Jia-jun Li | |

## PUBLICATIONS

\* Indicates equal contribution

[C.2] **Structured Generation and Exploration of Design Space with Large Language Models for Human-AI Co-Creation**

Sangho Suh\*, **Meng Chen\***, Bryan Min, Toby Jia-Jun Li, and Haijun Xia

*Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2024)*

[C.1] **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, and Jay Brockman

*Proceedings of the 1st Symposium on Human-Computer Interaction for Work (CHI WORK 2022)*

[W.2] **CodeGRITS: A Research Toolkit for Developer Behavior and Eye Tracking in IDE**

Ningzhi Tang\*, Junwen An\*, **Meng Chen**, Aakash Bansal, Yu Huang, Collin McMillan, and Toby Jia-Jun Li

*46th International Conference on Software Engineering Companion (ICSE-Companion 2024)*

[W.1] **An Empirical Study of Developer Behaviors for Validating and Repairing AI-Generated Code**

Ningzhi Tang\*, **Meng Chen\***, Zheng Ning, Aakash Bansal, Yu Huang, Collin McMillan, and Toby Jia-Jun Li

*13th Annual Workshop at the Intersection of PL and HCI (PLATEAU 2023)*

## RESEARCH EXPERIENCES

9/2021- present **Undergraduate Research Assistant**

SaNDwich Lab, University of Notre Dame — Notre Dame, IN

*Advisor: Prof. Toby Jia-Jun Li*

<u>Bridging Inequality in Digitally Mediated Gig Work</u>

- Developed an Android data collector app (CREPE) that utilizes graph query to extract data from research participants' phones.

- Analyzed data collected from gig workers to discover inequality in Digitally Mediated Gig Work.
- Presented in 2022 Notre Dame Lucy Family Institute for Data Science Fall Symposium.

<u>Characterizing and Modeling Programmer Behavior Through Eye Tracking</u>

- Leveraged Tobii eye tracker to characterize and study programmer behavior in software engineering tasks.
- Designed models that predict or mimic the eye movement sequences to support programmers in validating and repairing Copilot-generated codes.

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| 6-9/2023 | **Visiting Researcher** |

Creativity Lab, UC San Diego      La Jolla, CA

*Advisor: Prof. Haijun Xia*

- Proposed a new interaction framework for human-AI collaboration in creative tasks that build on the premise that LLMs, which allow users to explore a space of possible responses, rather than giving a single data point in response to user input.
- Developed Luminate, a novel interactive system that demonstrates this idea by facilitating the process of exploring the LLM outputs and enabling spatial exploration.
- Led the user study of 14 demonstrating that enabling dimensional exploration of LLM output space facilitates divergent thinking and the understanding of the design space.
- Submitted first-authored paper to CHI2024.

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| 6-8/2022 | **Visiting Research Fellow** |

Neural and Data Science Lab, Feinstein Institute for Medical Research      Manhasset, NY

*Advisor: Prof. Theodoros Zanos*

<u>Maternal Heart Rate Variability as a Predictor of Intrapartum Fever</u>

- Identified 4 HRV metrics (i.e., RMSSD, SDNN, and LF) 2-3h prior to fever as early predictors for maternal intrapartum fever and built a logistic regression model to predict necessity of therapeutic intervention (AUC = 0.748).
- Presented in Feinstein Institute for Medical Research Summer Poster Session.

<u>Assessment of Physiological Signs Related to Stress Using Wearable Device</u>

- Analyzed data collected from Fitbit bands and found 7 granger-causality relationships between heart rate, HRV, and sleep quantity and quality.
- Built Structural Equation Modeling to model the causal relations stress level based on heart rate, HRV, and sleep.

## SCHOLARSHIPS, FELLOWSHIPS & GRANTS

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| 2023 | UIST Student Travel Grant | Association of Computational Machinery |
| 2023 | DaVinci Multidisciplinary Grant ($4,500) | Institute for Scholarship in Liberal Arts |
| 2023 | Summer Research Funding ($3,500) | Meruelo Family Center for Career Development |
| 2022 | Precision Medicine Fellowship ($5,600) | Berthiaume Institute for Precision Health |
| 2020 | Stamps (Full tuition-and-fee) Scholarship | Stamps Family Charitable Foundation |
| 2020 | Greater China Scholarship | University of Notre Dame |

## HONORS & AWARDS

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| 2023 | Best Insight Award ($1,000) | American Statistical Association (ASA) Data Fest |
| 2022 | Best Visualization Award ($1,000) | ASA Data Fest |
| 2022 | Junior Inductee | Tau Beta Pi National Engineering Honor Society |

| 2021 | Best Presentation Award ($2,000) | Marmon Engineering Innovate-O-Thon |
| 2019 | Gold Award | International Genetically Engineered Machine Competition (iGEM) |
| All Semesters | Dean's Honor List | |

## TEACHING

| TA | FA23 | CSE 30151 | Theory of Computing | | |
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| Course Tutor | SP23 | CSE 20312 | Data Structures | CSE 20289 | Systems Programming |
| | | CSE 20110 | Discrete Math | CSE 20311 | Fundamentals of Computing |

## SERVICE

| Reviewer | ACM CHI(LBW) | '23 '24 |
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## TALK

| 11/2023 | Structured Generation and Exploration of Design Space with LLMs for Human-AI Co-Creation |
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| | *Notre Dame NL+ Seminar* |

## OUTREACH & LEADERSHIPS

| 2023 – 2024 | VP for Event Planning | Data Science Club of Notre Dame |
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| 2023 – 2024 | President | Philosophy Club of Notre Dame |
| 2023 | Scholar Expo Organizing Committee | Stamps Scholar Biannual National Convention |
| 2022 – 2023 | Director of Resources | University of Notre Dame International Student Advisory Board |
| 2019 – 2021 | Executive Board | 7th & 8th Conference of Chinese iGEMer Community |

## INDUSTRY EXPERIENCES

| 2021.6-7 | **Technology Intern**, Xiaomi Technology Inc. | Beijing, China |
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| | Researched Simultaneous Localization and Mapping (SLAM) algorithms in the autonomous driving field | |
| 2020.8-9 | **Investment Intern**, SEE Fund | Beijing, China |
| | Composed a 20-page sleep tracker industry pitchbook for Tiposi, a Silicon Valley based healthcare startup | |

## SKILLS

| **Programming** | C | C++ | Java | Python | HTML/CSS/JavaScript | TypeScript | Unix Shell and others |
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| **UX Skills** | Qualitative Research | Quantitative Research | Participatory Design | |
| **Tools** | Android Studio | PyTorch | React & node.js | Flask | Figma | Arduino |
| **Artistic Skills** | Photography | Procreate | Sketching | Watercolor |
| **Languages** | English | Mandarin Chinese |