

# Danniell Hu

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## EDUCATION

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### University of Michigan, Rackham Graduate School

*Ph.D., Computer Science, GPA 4.0/4.0*

Ann Arbor, MI  
Expected Apr. 2028

*Advisor: Dr. Elizabeth Bondi-Kelly, Dr. Westley Weimer*

- KLA Fellowship Recipient, \$45,000

### University of Michigan, College of Engineering

*B.S.E., Computer Science, Cum Laude*

Ann Arbor, MI  
May 2023

## RESEARCH EXPERIENCE

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### University of Michigan

*Ph.D. Researcher*

Ann Arbor, MI  
2024 – Present

- Research focuses on human-centered and participatory AI development, examining how AI systems can be designed to align with the needs, values, and constraints of real-world stakeholders across clinical, educational, and social-impact settings.
- Conducted a controlled human-subjects study (n=49) finding that human-goal reasoning in requirements artifacts, not traditional RE metrics or prior AI experience, predicts stakeholder-aligned AI design.
- Leading mixed-methods user research with patients, clinicians, and community health workers on PATHFinder, an LLM-powered prenatal care planning system, examining trust, transparency, and clinician oversight in multi-stakeholder clinical AI.
- Proposed a framework categorizing human-AI collaboration modes synthesizing design considerations across fairness, labor, privacy, and human agency.

### University of Michigan

*Undergraduate Researcher*

Ann Arbor, MI  
2022 – 2024

- Conducted a neuroimaging study of n=28 programmers using functional near-infrared spectroscopy (fNIRS) to investigate the cognitive processes underlying end-to-end debugging.
- Proposed and validated a five-stage cognitive model of debugging (Task Comprehension, Fault Localization, Code Editing, Compiling, Output Comprehension), providing the first neurological evidence that these stages are both behaviorally and neurally distinct.
- Designed and analyzed controlled identifier morphology conditions to study how variable naming impacts cognitive load for programmers with reading difficulties (dyslexia, non-native English speakers).

## INDUSTRY EXPERIENCE

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### Stryker Corporation – Medical Division, Acute Care

*R&D Embedded Software Design Engineer*

Kalamazoo, MI  
July 2023 – Aug 2024

- Designed embedded software and PCBA hardware for Stryker medical devices, including hospital beds and support surfaces, using ColdFire and Renesas microcontrollers.
- Collaborated with cross-functional teams across test lab, quality assurance, hardware, electrical, software, marketing, and leadership.
- Participated in customer visits contributing insights that led to multi-million dollar sales opportunities.

## Stryker Corporation – Medical Division, Acute Care

R&D Embedded Software Design Intern

Portage, MI  
Summers, July 2020 – July 2022

- Automated test suites for large-scale, multi-medium embedded software systems using Jenkins and Artifactory, improving CI/CD pipeline efficiency.
- Researched and prototyped a high-level real-time tracking system integrating UWB, Bluetooth, and infrared technologies for existing embedded product lines.
- Developed computer vision and machine learning models to improve patient safety around hospital beds, including patient tracking, pose detection, object recognition, and image obfuscation.

## PUBLICATIONS & PREPRINTS

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- **Hu, Danniell**, Westley Weimer, and Elizabeth Bondi-Kelly. "Must Have, Could Have... What? Systems Requirements Factors That Improve Stakeholder-System Fit in AI Development." In submission to RE, 2026.
- **Hu, Danniell**, Diana Acosta Navas, Susanne Gaube, Hussein Mozannar, Matthew E. Taylor, Krishnamurthy Dvijotham, and Elizabeth Bondi-Kelly. "Human at the Center: A Framework for Human-Driven AI Development." *AI Magazine*, 46(4), 2025. DOI: 10.1002/aaai.70043
- **Hu, Danniell**, Priscila Santiesteban, Madeline Endres, and Westley Weimer. "Towards a Cognitive Model of Dynamic Debugging: Does Identifier Construction Matter?" *IEEE Transactions on Software Engineering*, 50(11), 2024. DOI: 10.1109/TSE.2024.3465222

## TECHNICAL SKILLS

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Languages: Python, C/C++, Java, Javascript, etc.]

ML / AI: PyTorch, [Hugging Face, scikit-learn, etc.]

Tools: Git, LaTeX, [Docker, etc.]

Research: Requirements Engineering, Participatory Design, User Studies, Statistical Analysis

## HONORS & AWARDS

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### KLA Fellowship

2024

University of Michigan Rackham Graduate School — \$45,000 fellowship award.

### Ford Blue Oval STEAM Scholarship

2019 – 2023

Ford Motor Company — \$10,000 annually.

- Invitation-only program that awards scholarships to college-bound students who have participated in select Ford STEAM programs and meet selection criteria. Recurring annually upon academic standing.

## SERVICE & LEADERSHIP

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### University of Michigan, CSE Graduate Student Organization (CSEG)

Ann Arbor, MI

Social Chair

Aug 2025 – Present

- Plan and execute recurring department-wide social events (e.g., weekly Tea Time, seasonal mixers, game nights, off-campus outings) to strengthen graduate student community and faculty engagement.
- Build ongoing feedback mechanisms with CSEG members and use qualitative and quantitative input to refine programming and improve responsiveness to student needs.

- Advocated for and led the redesign of CSEG website to improve accessibility of resources and initiatives.
- Facilitated team-building activities, cohort cohesiveness, and inter-departmental collaboration.

**University of Michigan, AI Lab**

*AI Blog Editor*

Ann Arbor, MI  
Aug 2025 – Present

- Write, edit, proofread, and publish articles for the University of Michigan AI Lab blog, maintaining a consistent publication cadence and ensuring editorial quality.
- Recruit and support graduate student contributors to broaden research communication across the lab community.

**REFERENCES**

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Available upon request.