

Laura Stegner

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I am a PhD Candidate researching at the intersection of Human-Computer Interaction, Human-Robot Interaction, and Healthcare. My goal is to design, build, and evaluate intelligent systems that can support complex tasks in healthcare environments. Currently, my primary research focus is on robotic systems that can support caregiving in assisted living settings. Focusing especially on professional caregivers as under-represented stakeholders in healthcare research, I aim to build systems that overcome the ecological challenges of deploying robots in the real world. I take an interdisciplinary approach to my work, utilizing qualitative, community-based, quantitative, and technical approaches from across computer science, engineering, social science, nursing, and design.

EDUCATION

PhD in Computer Sciences , University of Wisconsin–Madison (UW–Madison) Advisor: Dr. Bilge Mutlu, Research area: Human-Robot Interaction, Doctoral minor: Kinesiology	2019–Current
MS in Computer Sciences , University of Wisconsin–Madison	2019–2022
BS in Electrical Engineering , University of Cincinnati (UC) Summa Cum Laude, Distinguished University Honors Scholar	2014–2019
Exchange Student , Newcastle University Full semester academic exchange	Fall 2018
Study Abroad , Seoul National University Summer language and culture exchange program	Summer 2015

AWARDS AND HONORS

2024	Cisco Distinguished Graduate Fellowship 9 months of full PhD funding
2023	Heidelberg Laureate Forum Full funding to attend the Heidelberg Laureate Forum as a Young Researcher
2023	Golden Brick Award UW–Madison departmental award for outstanding service
2023	Best Talk Awarded at the UW–Madison Computer Science Symposium
2020	National Science Foundation Graduate Fellowship 3 years of full PhD funding and 2 years of additional program support
2019	LUCID Training Program 2 years of full PhD funding
2019	Presidential Leadership Medal of Excellence Recognized for outstanding service and leadership during undergraduate studies
2018	Rowe Scholarship Fund Full support for an exchange semester at Newcastle University
2018	DAAD RISE Germany Scholar 3 months research support at the Max-Planck Institute for Software Systems

- 2019 **Mantei/Mae Award**
Selected annually by UC Electrical Engineering and Computer Science Department for outstanding academic achievement, also awarded in 2017 and 2018
- 2016 **UC EECS Department Scholarship**
Nominated by a committee of faculty and staff for academic merit and service to the department
- 2014 **Cincinnatus University Scholar**
Four-year award for partial tuition support based on academic merit and community service
- 2014 **American Electric Power Educational Trust Scholarship**
Merit-based award for one semester's tuition

PUBLICATIONS

PEER-REVIEWED FULL CONFERENCE PAPERS

- [C8] **Reconciling Person-Centered Care Principles and Practice for Robot Design** Under Review
L. Stegner, E. Senft, T. Roberts, and B. Mutlu
ACM/IEEE International Conference on Human-Robot Interaction
- [C7] **Understanding On-the-Fly End-User Robot Programming** DIS '24
L. Stegner,* Y. Hwang,* D. Porfirio, and B. Mutlu | *Equal contribution
Acceptance rate: 26.9%
Designing Interactive Systems Conference 2024
10.1145/3643834.3660721 [🔗](#)
- [C6] **“This really lets us see the entire world:” Designing a conversational telepresence robot for homebound older adults** DIS '24
Acceptance rate: 26.9%
Y. Hu, **L. Stegner**, Y. Kotturi, C. Zhang, Y. Peng, F. Huq, Y. Zhao, J. Bigham, B. Mutlu
Designing Interactive Systems Conference 2024
10.1145/3643834.3660710 [🔗](#)
- [C5] **Situated Participatory Design: A Method for In Situ Design of Robotic Interaction with Older Adults** CHI '23
Acceptance rate: 27.6%
L. Stegner, E. Senft, and B. Mutlu
2023 CHI Conference on Human Factors in Computing Systems
10.1145/3544548.3580893 [🔗](#)
- [C4] **Sketching Robot Programs On the Fly** HRI '23
Acceptance rate: 23.8%
D. Porfirio, **L. Stegner**, M. Cakmak, A. Sauppé, A. Albarghouthi, and B. Mutlu
2023 ACM/IEEE International Conference on Human-Robot Interaction
10.1145/3568162.3576991 [🔗](#)
- [C3] **Designing for Caregiving: Integrating Robotic Assistance in Senior Living Communities** DIS '22
Acceptance rate: 21.5%
L. Stegner and B. Mutlu
Designing Interactive Systems Conference 2022
10.1145/3532106.3533536 [🔗](#)
- [C2] **Figaro: A Tabletop Authoring Environment for Human-Robot Interaction** CHI '21
Acceptance rate: 26.3%
D. Porfirio, **L. Stegner**, M. Cakmak, A. Sauppé, A. Albarghouthi, and B. Mutlu
2021 CHI Conference on Human Factors in Computing Systems
10.1145/3411764.3446864 [🔗](#)
- [C1] **Paracosm: A test framework for autonomous driving simulations** FASE 2021
R. Majumdar, and A. Mathur, M. Pirron, **L. Stegner** and D. Zufferey
24th Intl. Conference on Fundamental Approaches to Software Engineering
10.1007/978-3-030-71500-7_9 [🔗](#)

PEER-REVIEWED WORKSHOP PAPERS AND POSTERS

- [P7] **Towards Leveraging End-User Knowledge for Long-Term Use of Robots in Care Facilities** HRI '24 Workshop
L. Stegner, Y. Hwang, D. Porfirio, and B. Mutlu
Human-Robot Interaction for Aging in Place Workshop at HRI '24
- [P6] **Considerations for End-User Development in the Caregiving Domain** AAAI FSS '23
L. Stegner, D. Porfirio, M. Roberts, and L. Hiatt
Association for the Advancement of Artificial Intelligence 2023 Fall Symposium on Unifying Representations for Robot Application Development (UR-RAD)
- [P5] **Towards Extending Person-Centered Care to Address Care Technology** IROS '23 Workshop
L. Stegner, E. Senft, T. Roberts, and B. Mutlu
Geriatrics AI Workshop at IROS 2023
- [P4] **Knowing Who Knows What: Designing Socially Assistive Robots with Transactive Memory System** CHI '23 Workshop
Y. Hu, L. Stegner, and B. Mutlu
Socially Assistive Robots as Decision Makers Workshop at CHI '23
- [P3] **Factors that Affect Personalization of Robots for Older Adults** HRI '23 Workshop
L. Stegner, E. Senft, and B. Mutlu
CONCATENATE Workshop at HRI '23
- [P2] **Programming-Direct Manipulation Integration for Simulation Environments** RISE Germany '18 Poster
R. Majumdar, A. Mathur, M. Pirron, L. Stegner and D. Zufferey
2018 Research Internships in Science and Engineering Germany Meeting
- [P1] **Determination of manganese using cathodic stripping voltammetry and lead using anodic stripping voltammetry** ACS CRM '16 Poster
L. Stegner, W. Kang, E. Haynes, W.R. Heineman, I. Papautsky
2016 American Chemical Society Central Regional Meeting

INVITED TALKS

- 2024 **George Washington University**, Assistive Robotics and Tele-Medicine (ART-Med) Lab
- 2024 **National University of Singapore**, Collaborative Learning and Adaptive Robots Group (Virutal)
- 2023 **University of Maryland**, Human-Computer Interaction Laboratory
- 2023 **Johns Hopkins University**, Intuitive Computing Lab
- 2023 **Heidelberg Laureate Forum**, Lightning Talk & Poster Flash Session
- 2023 **Colorado School of Mines**, MIRRORLab Summer Speaker Series (Virtual)
- 2023 **National Robotarium and Edinburgh Centre for Robotics**, Computer Science Seminar Series

TEACHING

- 2022 **Guest Lecturer**, UW-Madison SOC WORK/SOC 422: Social Issues in Aging
Design considerations for robots in senior living communities
- 2022 **Session Instructor**, UW-Madison Grandparents University
Co-organized and led interactive lab on social robotics for children and their grandparents
- 2021 **Workshop Facilitator**, UW-Madison Psychology Research Experience Program
Created hands-on virtual workshop introducing natural language processing with Python

- 2019 **Teaching Assistant**, UC College of Engineering and Applied Science
Led weekly discussion sessions for project-based introductory engineering course
- 2019 **Lab Instructor**, UC Department of Electrical Engineering and Computer Science
Designed and led labs for a programming course using the Zumo32U4 bots from Polulu
- 2017 **Peer Leader**, UC Center for First Year Experience
Developed and taught two lectures per week for a class of 15 freshman engineers to ease college transition

MENTORING AND SUPERVISION

I mentor students in both research and technical skills according to their individual interests and goals. Students either work on independent projects or collaborate as part of a larger team.

CURRENT

Masters (Semester Project)

Pedro Goulart

Undergraduates

Allen Chien, Yuqing Wang, Soft Liampisan, Yi Cheng Lee

PAST

Undergraduates

Shanshan Li, Mary Kristjanson, Wen Jie Lee, Julian Zhu, Kartikeye Khanna, Akarsh Ache, Zach Potter, Emma Liu

ACADEMIC SERVICE

EVENT ORGANIZATION

- 2024 **Unifying Representations for Robot Application Development (UR-RAD)**
Association for the Advancement of Artificial Intelligence 2024 Fall Symposium Series
- 2024 **RoboCare Design Workshop: Understanding, Translating, Operationalizing, and Scaling Up Design Knowledge Regarding Robotic Systems for Care Assistance**
DIS '24 Companion: Companion Publication of the 2024 ACM Designing Interactive Systems Conference
- 2024 **End-User Development for Human-Robot Interaction (EUD4HRI)**
HRI '24: Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction
- 2023 **Unifying Representations for Robot Application Development (UR-RAD)**
Association for the Advancement of Artificial Intelligence 2023 Fall Symposium Series

REFeree SERVICE

Journals

- Human-Computer Interaction
- Information Technology & People
- International Journal of Social Robotics

Conferences

- ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- ACM Conference on Designing Interactive Systems (DIS)
- ACM Conference on Computer Supported Cooperative Work (CSCW)

STUDENT VOLUNTEER

- DIS '24

LEADERSHIP AND OUTREACH

Mentor , ACM-W student chapter mentorship program Monthly meetings with a group of 3-4 undergraduate women in computer and data science	2023–Current
Student Representative , Grace Hopper Celebration for Women in Computing Answered questions from prospective graduate students who visited the UW–Madison booth	2024
Mentor , UW–Madison Computer Sciences New Grad Supported a small group of incoming graduate students through virtual meetings	2023–2024
Coordinator and Panelist , High school outreach day Organized and hosted half-day lab visit and lead panel	2023
Tour Guide , People and Robots Lab Introduced lab spaces and coordinated tech demonstrations, 3-5 annually	2021–2024
Treasurer , Student Association for Computing Machinery (ACM) Managed \$15,000 USD annual coffee budget for the UW–Madison Computer Sciences department	2020–2024
Vice President , Eta Kappa Nu Honor Society Led initiative where members produced videos explaining challenging concepts from core courses	2017–2019
Math and Reading Tutor , Cincinnati Public Schools Assisted elementary schoolers with math and reading concepts in group and individual settings	2014–2018

PROFESSIONAL EXPERIENCE

U.S. Naval Research Laboratory , NREIP Researcher PI: Dr. Laura Hiatt, Location: Washington, DC, USA <ul style="list-style-type: none">Improving the alignment of user expectations and robot task execution for user-specified tasks using automated planning and end-user programming	Jun–Sep 2023, May–Aug 2024
Max Planck Institute for Software Systems (MPI-SWS) , Research Intern PI: Dr. Rupak Majumdar, Location: Kaiserslautern, Germany <ul style="list-style-type: none">Creating parameterized test environments for autonomous car controllers	Jun–Sep 2018, May–Aug 2019
Novel Device Lab / Eccrine Systems, Inc. , Research Co-op PI: Dr. Jason Heikenfeld, Location: Cincinnati, Ohio, USA <ul style="list-style-type: none">Developing and characterizing a sweat flow-rate sensor	Aug–Dec 2017
American Electric Power , Protection and Controls Intern Supervisor: Rachel Perdew, Location: Columbus, Ohio, USA <ul style="list-style-type: none">Assisted with detailed scoping for substation networking projects and performed quality review of schematic and wiring diagrams	Jan–May 2017
Sandvik Hyperion , Manufacturing Systems Co-op Supervisor: Mark Harrand, Location: Worthington, Ohio, USA <ul style="list-style-type: none">Developed and released database modules and end-user software to digitize process improvement tracking and import data from sister plant into local database	May–Aug 2016, Aug–Dec 2015