

Ameer Helmi

Corvallis, Oregon 97355

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EDUCATION

Oregon State University

Doctor of Philosophy, Robotics

GPA (3.8/4.0)

Advisor: Naomi T. Fitter

Corvallis, OR

09/2019 - Present

University of Illinois at Chicago

B.S. in Biomedical Engineering

GPA (3.7/4.0)

Chicago, IL

08/2009 – 06/2013

WORK EXPERIENCE

Oregon State University

Graduate Researcher

Corvallis, OR

09/2019 – Present

- Designed and assembled a custom autonomous assistive robot incorporating ROS, LIDAR, and a Raspberry Pi for encouraging physical activity for children.
- Created overhead camera system for region-of-interest tracking in child-robot interaction.
- Constructed infant behavior models through observation coding methods and simulation testing in Python.
- Mentored 6 undergraduates in robotics and research methods through multiple summer Research Experience for Undergraduates (REU) programs.
- Developed automated assignment grading as a teaching assistant for undergraduate Python course.
- Completed coursework in artificial intelligence, control systems, human-robot interaction, disability studies, and human research methods.

Epic Boost

Management Consultant

Seattle, WA

08/2015 – 12/2018

- Advised team of 8 application coordinators for Yale New Haven Health on system issues leveraging broad technical expertise.
- Directed a team as lead build consultant for the University of California, Los Angeles (UCLA).
- Spearheaded first hybrid UCLA Molecular and Cytogenetic transition from print to electronic systems.

Epic

Technical Project Manager

Verona, WI

08/2009 – 06/2013

- Oversaw the ISO standard result report template redesign team as project lead for Cambridge University NHS (CUH), Epic's first UK customer.
- Resolved over 200 issue logs with robust and creative fixes as technical manager for laboratory application at CUH and Memphis Baptist Memorial Hospital
- Improved CUH laboratory result turnaround times by 20% through enhancement of first integrated Cytogenetics/Molecular workflow system.
- Led as technical advisor and lead mentor for Northwest Community Hospital.
- Fixed over 20 bugs in M Cache system code and developed multiple software enhancements.

- Developed a reputation for excellence, receiving positive customer and internal feedback on vast technical capabilities.

Hospira

Engineering Co-op

Corvallis, OR
01/2012 – 05/2012

- Analyzed Symbiq plunger displacement error by conducting tests both in simulation and real-time, leading to issue resolution.
- Created a new design for the Symbiq shroud cover, employing SolidWorks CAD design and pressure testing.
- Gathered and organized data on pricing and metrics from more than 20 vendors for the Symbiq material redesign.

University of Illinois at Chicago

Research Assistant

Chicago, IL
08/2009 – 06/2013

- Finalized re-design and testing of an automated glaucoma diagnosis system for engineering senior design project.
- Constructed Hebbs-Williams rat maze for data collection for Dr. John Larson
- Implemented and tested Fair Weather Portable Electroantennogram System as a data collection tool for Dr. John Hetling.
- Development of an integrated LabVIEW GUI for Capnograph flow instrument for Dr. Randal Dull.

PUBLICATIONS

Unpublished Manuscripts (In Preparation and Under Review)

Ameer Helmi, Emily Scheide, Tze-Hsuan Wang, Samuel W. Logan, Geoffrey A. Hollinger, Naomi T. Fitter, "GoBot: An Autonomous Assistive Robot using Behavior Trees to Encourage Child Mobility," *Paper in review to Transactions in Human-Robot Interaction Journal*, 2023

Peer-Reviewed Conference Papers

Rafael Morales Mayoral, **Ameer Helmi**, Shel-Twon Warren, Samuel W. Logan, and Naomi T. Fitter, "Robottheory Fitness: GoBot's Engagement Edge for Spurring Physical Activity in Young Children," *Paper accepted to the International Conference on Intelligent Robots and Systems (IROS)*, 2023

Ameer Helmi, Tze-Hsuan Wang, Samuel W. Logan, Naomi T. Fitter, "Harnessing the Power of Movement: A Body-Weight Support System & Assistive Robot Case Study," *Paper accepted to the International Consortium on Rehabilitation Robotics (ICORR)*, 2023

Ameer Helmi, Kristen Koenig, and Naomi T. Fitter, "A Model Child? Behavior Models for Simulated Infant-Robot Interaction," *Paper accepted to the International Conference on Social Robotics (ICSR)*, Florence, Italy, 2022

Ameer Helmi, Samantha Noregaard, Nathash Giulietti, Samuel W. Logan, Naomi T. Fitter, "Let Them Have Bubbles! Filling Gaps in Toy-Like Behaviors for Child-Robot Interaction," *Paper accepted to the IEEE International Conference on Robotics and Automation (ICRA)*, Philadelphia, PA, 2022.

Ashwin Vinoo, Layne Case, Gabriela R. Zott, Joseline Raja Vora, **Ameer Helmi**, Samuel W. Logan, Naomi T. Fitter, "Design of an assistive robot for infant mobility interventions," *Paper accepted to the*

IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Vancouver, Canada, 2021.

Brian J. Zhang, Ryan Quick, **Ameer Helmi**, and Naomi T. Fitter, "Socially assistive robots at work: Making break-taking interventions more pleasant, enjoyable, and engaging," *Paper accepted to the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Las Vegas, Nevada, USA, 2020.

Journal Articles

Joseline Raja Vora, **Ameer Helmi**, Christine Zhan, Eliora Olivares, Tina Vu, Marie Wilkey, Samantha Noregaard, Naomi T. Fitter, and Samuel W. Logan, "Influence of a socially assistive robot on physical activity, social play behavior, and toy-use behaviors of children in a free play environment: A within-subjects study," *Frontiers in Robotics and AI*, 2021.

Short Peer-Reviewed Conference and Workshop Papers and Abstracts

Ameer Helmi, Lucas Dassonville, Christine Zhan, and Naomi T. Fitter, "GoBot Dance: An Air Dancer-Inspired Robot For Child-Robot Interaction," *Proceedings of the From modelling to understanding children's behaviour in the context of robotics and social artificial intelligence Workshop, International Conference on Social Robotics (ICSR)*, Florence, Italy, 2022.

Ameer Helmi, Tze-Hsuan Wang, Christine Zhan, Kenneth Nys, Pico Sankari, Samuel W. Logan, and Naomi T. Fitter, "GoBot Throw: A Toy-Inspired Ball-Launching Robot For Child-Robot Interaction," *Proceedings of the From modelling to understanding children's behaviour in the context of robotics and social artificial intelligence Workshop, International Conference on Social Robotics (ICSR)*, Florence, Italy, 2022.

Ameer Helmi and Naomi T. Fitter, "Lights, camera, action! Evaluating robot reward behaviors in free play with children," *Proceedings of the Interdisciplinary Research Methods for Child-Robot Relationship Formation Workshop, ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Boulder, CO, USA, 2021.

Ameer Helmi and Naomi T. Fitter, "Using motion expert feedback to design models for infant-robot interaction," *Proceedings of the 2020 ICSR Workshop on Child-Robot Interaction, International Conference on Social Robotics (ICSR)*, Golden, CO, USA, 2020.

PRESENTATIONS

Conference Presentations

Ameer Helmi, "A Model Child? Behavior Models for Simulated Infant-Robot Interaction" *Presentation at the International Conference on Social Robotics (ICSR)*, Florence, Italy, 2022

Ameer Helmi, "Let Them Have Bubbles! Filling Gaps in Toy-Like Behaviors for Child-Robot Interaction" *Presentation at the IEEE International Conference on Robotics and Automation (ICRA)*, Philadelphia, PA, 2022.

Ameer Helmi, "Design of an assistive robot for infant mobility interventions," *Virtual Presentation at the IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, Vancouver, Canada, 2021.

Workshop Presentations

Ameer Helmi, "GoBot Throw and GoBot Dance: Assistive Robot For Child-Robot Interaction," *Presentation at the From modelling to understanding children's behaviour in the context of robotics and social artificial intelligence Workshop, International Conference on Social Robotics (ICSR)*, Florence, Italy, 2022.

Ameer Helmi, "Lights, camera, action! Evaluating robot reward behaviors in free play with children," *Virtual Presentation at the Interdisciplinary Research Methods for Child-Robot Relationship Formation Workshop, ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Boulder, CO, USA, 2021.

Ameer Helmi, "Using motion expert feedback to design models for infant-robot interaction," *Virtual Presentation at the 2020 ICSR Workshop on Child-Robot Interaction, International Conference on Social Robotics (ICSR)*, Golden, CO, USA, 2020.

Poster Presentations

Ameer Helmi, "Let Them Have Bubbles! Filling Gaps in Toy-Like Behaviors for Child-Robot Interaction," *Poster Presentation at the IEEE International Conference on Robotics and Automation (ICRA)*, Philadelphia, PA, 2022.

Invited Talk

Ameer Helmi, "Design of an assistive robot for infant mobility interventions," *Presentation at the Northwest Robotics Symposium (NWRS) Seattle, Washington, 2022.*

MENTORSHIP

Undergraduate Researchers

- Lara Rupnawar: Summer REU Student at OSU, 2023
- Emily Shannon: Interdisciplinary Senior Capstone Team Member at OSU, 2022-2023
- Bethany Bibler: Interdisciplinary Senior Capstone Team Member at OSU, 2022-2023
- Susan Liu: Interdisciplinary Senior Capstone Team Member at OSU, 2022-2023
- Luke Dassonville: Summer REU Student at OSU, 2022, incoming OSU student
- Fernando Castillo: Summer REU Student at OSU, 2022, from Pomona College
- Rafael Morales: undergraduate researcher at OSU, 2021-22
- Christine Zhan: Mechanical Engineering Capstone Team Member at OSU, 2021-2022
- Pico Sankari: Mechanical Engineering Capstone Team Member at OSU, 2021-2022
- Kenneth Nys: Mechanical Engineering Capstone Team Member at OSU, 2021-2022
- Kristen Koenig: Summer REU Student at OSU, 2021, from Vassar College
- Shel-Twon Warren: Summer REU Student at OSU, 2021, from University of Arkansas
- William Kistler: Mechanical Engineering Capstone Team Member at OSU, 2020-2021
- Joshua Moore: Mechanical Engineering Capstone Team Member at OSU, 2020-2021

- Emily Ball: Mechanical Engineering Capstone Team Member at OSU, 2020-2021
- David Rosales: Mechanical Engineering Capstone Team Member at OSU, 2020-2021
- Brandon Einck: Mechanical Engineering Capstone Team Member at OSU, 2020-2021
- Misael Torres: STEM Leaders Researcher at OSU, 2020-21
- Connor Phillips: Summer REU Student at OSU, 2020, from Arizona State University
- Joshua Phelps: Summer Undergraduate Researcher at OSU, from Brown University

PROFESSIONAL SERVICE

Robotics Graduate Student Association (RGSA) Treasurer (2020-2022)

Conference and Journal Paper Reviews

IEEE International Conference on Robotics and Automation (ICRA)

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

ACM/IEEE International Conference on Human-Robot Interaction (HRI)

International Conference on Social Robotics (ICSR)

Robotics: Science and Systems (RSS)

Frontiers in Robotics and AI