

# Ameer Helmi

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Robotics PhD candidate with a prior background in technical management, engineering software, and hardware design. Research goals include the design and evaluation of autonomous assistive robots as part of physical therapy interventions for children with disabilities. Creative problem solver with a strong track record resolving technical issues and pioneering novel systems. Highly reputable project leader who is skilled at directing professional teams and individuals.

**Technical Skills:** Robot Operating System (ROS), Python, MATLAB, Machine Learning, 3D printing, Arduino, Git, ROS2

## EDUCATION

### Doctor of Philosophy, Robotics

9/2019 - Present

#### *Oregon State University*

GPA (3.8/4.0)

- Designed and assembled a custom autonomous assistive robot incorporating ROS, LIDAR, behavior trees, and a Raspberry Pi for physical therapy interventions.
- Created overhead camera sensing system for region-of-interest tracking.
- Developed machine learning model of thermal imaging for infant affect detection.
- Mentored 21 undergraduates in robotics through summer programs and capstone projects.
- Developed automated assignment grading for undergraduate Python course.
- Completed coursework in artificial intelligence, control systems, human-robot interaction, human-computer interaction, disability studies, and human research methods.

### Bachelor of Science, Biomedical Engineering

8/2009 - 6/2013

#### *University of Illinois*

GPA (3.9/4.0)

- Finalized re-design and testing of an automated glaucoma diagnosis system for engineering senior design project.
- Served as a research assistant in three different research laboratories.
- Led team of 50 members as president of the Chicago Engineering Design Team.

## PROFESSIONAL EXPERIENCE

### Management Consultant

8/2015 - 12/2018

#### *Epic Boost Services - Seattle, WA*

- 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.

## **Technical Project Manager**

6/2013 - 8/2015

### ***Epic Technical Services - Verona, WI***

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

## **Engineering Co-op**

1/2012 - 5/2012

### ***Hospira - Chicago, IL***

- 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.

## **PUBLICATIONS & CERTIFICATIONS**

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, and 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)*, Singapore, 2023

**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

**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 ([link](#))

**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. ([link](#))

UW Professional & Continuing Education, Certificate C# and ASP.Net Programming