



## EDUCATION

WRIGHT STATE UNIVERSITY, FAIRBORN, OH | PHD IN COMPUTER SCIENCE, EXPECTED AUGUST 2028

CLARKSON UNIVERSITY, POTSDAM, NY | BS IN COMPUTER SCIENCE, MAY 2024, GPA: 3.67 / 4.00

## SKILLS

Python • C++ • Java •  $\LaTeX$  • C • CSS • C# • MATLAB • PyTorch • Visual Studio • Rstudio • ROS

## RESEARCH

**TERASCALE ALL-SENSING RESEARCH STUDIO | RESEARCHER: APR 2023 – NOW | FAIRBORN, OH & POTSDAM, NY**

- Developed robot-to-human handovers algorithms that incorporate physiological data from human receivers.
- Collected a large human-human handover dataset (HOH) using markerless motion capture. Responsible for annotating temporal events, performing frame-to-frame object model alignment using iterative closest point, and creating neural network to automatically infer parameters of handover such as grasp, pose, and timing.
- Created GraspPC, a neural network to predict multiple hypotheses of human grasp for human-aware robot grasp.
- Evaluated subject preferences toward robot-to-human handover with trajectories and pose mimicked from HOH dataset. Subjects show a preference for handovers with HOH poses and found them to be more natural.
- Analyzed pre-handover receiver behavior using human-human handover data, and found that receivers are proactive, coordinate motion with the giver, and predict expected length of time in giver motion.
- Worked on a collaborative project with Altec (Natick, MA) that leveraged Histogram of Gradients and Laplacian of Gaussian to detect regions of interest in thermal images. Met with Research Scientists at Altec to present findings.

## WORK EXPERIENCE

**DELSYS | R&D INTERN: MAY 2025 – AUG 2025 | NATICK, MA**

- Contributing to the development of software and algorithm design for next-generation applications in contact and non-contact physiology, computer vision, and body movement tracking.

**IMPETUS RESEARCH | RESEARCH ASSISTANT: JUN 2022 – JUL 2022 | POTSDAM, NY**

- Researched the incorporation of buyers in Agricultural Practices using Agent-Based Modeling. Presented research findings at the summer Research and Project Showcase.
- Developed materials for a STEM summer camp for K-12 students and facilitated activities for students whose families fall below the poverty line to encourage them to pursue careers in STEM.

**LA FARGEVILLE CENTRAL SCHOOL | ROBOTICS CAMP INSTRUCTOR: JUN – JUL 2022 | LA FARGEVILLE, NY**

- Helped 14 high school students create robots using LEGO Education SPIKE and UBTECH UKits.
- Taught 10 high school students C++ to control the robots that they built.

## AWARDS/CONFERENCE ACTIVITIES

Awards	2025	DoD SMART Scholarship Awardee
	2025	NSF Graduate Research Fellow Honorable Mention
	2025	Wright State University Excellence in Research Poster Presentation Award
Presentations	2024	Two technical paper oral presentations at IEEE RO-MAN, Pasadena, CA
	2024	Short presentation to American Welding Society (hosted by Weld Like a Girl), Yuma, AZ.
Poster	2023	One technical paper poster presentation at NeurIPS, New Orleans, LA
Demos	2024	Robot and sEMG integration for HRI at IEEE RO-MAN, Pasadena, CA
	2024	Robot and sEMG integration for HRI at IEEE CVPR, Seattle, WA
	2024	Robot and sEMG integration for HRI at IEEE-RAS Humanoids, Nancy, France
Volunteership	2024	Student volunteer at IEEE RO-MAN, Pasadena, CA

## PUBLICATIONS

- [1] A. Megyeri, N. Wiederhold, S. Banerjee, and N. Banerjee, "Human perceptions of robot-to-human handovers performed by data-driven robotic mimicry of human givers," IEEE ICRA, 2025.
- [2] A. Megyeri, N. Wiederhold, M. Kyrarini, S. Banerjee, and N. Banerjee, "GraspPC: Generating diverse hand grasp point clouds on objects," IEEE RO-MAN, 2024.
- [3] A. Megyeri, M. Kyrarini, S. Banerjee, and N. Banerjee, "Using human-human handover data to analyze giver and receiver timing relationships during the pre-handover phase," IEEE RO-MAN, 2024.
- [4] N. Wiederhold, A. Megyeri, D. Paris, S. Banerjee, and N. Banerjee, "HOH: Markerless multimodal human-object-human handover dataset with large object count," NeurIPS Datasets and Benchmarks, 2023.

- [5] E. Matzek, A. Megyeri, T. Yankee, N. Banerjee, and S. Banerjee, "VitaMaze: A VR exergame driven using feedback from physiological sensors," IEEE AIxVR, 2025.