

Isabella Bock

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EDUCATION

Yale University

New Haven, CT

Ph.D. Candidate in Computer Science

Aug 2026 – Present

Advisor: Professor Brian Scassellati

Tufts University, School of Engineering

Medford, MA

Bachelor of Science in Computer Science

(GPA: 3.94/4.0) *Sep 2022 – May 2026*

Advisor: Professor Elaine Short

University of Edinburgh

Edinburgh, Scotland

Study Abroad

Sep - Dec 2024

Università di Pavia

Pavia, Italy

Study Abroad

May - Jun 2024

RESEARCH INTERESTS

Human-Robot Interaction, Assistive Robotics, Shared Autonomy, Robot Learning

PUBLICATIONS

Bock, Isabella and Elaine Schaertl Short (Mar. 2026). *IODA-TC: Imaginary Out-of-Distribution Actions with Trajectory-Continuation Mapping*. Edinburgh, Scotland, UK. DOI: [10.1145/3776734.3794449](https://doi.org/10.1145/3776734.3794449).

HONORS & AWARDS

The de Florez Prize in Human Engineering, Tufts University

David Krumme Award for Experimental Computer Science, Tufts University

Tau Beta Pi, National Engineering Honor Society (Inducted 2025).

Dean's List, Tufts University, Issued by Kyongbum Lee and Jennifer Stephan, all semesters.

RESEARCH EXPERIENCE

Tufts University

Medford, MA

Undergraduate Researcher

Aug 2025 - May 2026

Advisor: Professor Elaine Short

- Designed a Trajectory-Continuation (TC) mapping for IODA, intended to preserve semantic similarity and predictability by selecting ID states based on local trends.
- Created an interactive demo with Python and Q-learning to illustrate the TC and Euclidean-distance mappings. The demo shows Euclidean distance mapping the agent to an ID state that leads to a discontinuous action while TC produces an action that continues a prior motion trend.

Tufts University

Medford, MA

*NSF Research Experience for Undergraduates**Jun 2025 - Aug 2025*

Advisor: Professor Elaine Short

- Used ROS and Python to create a Sim2Real pipeline linking Kinova-Gen3 lite 6-DOF arm joint states and mapping Genesis-simulated elastoplastic particles to depth-sensed clay, enabling the definition of state and action spaces for elastoplastic material manipulation.
- Identified failure modes of a Euclidean-distance mapping for Imaginary-Out of Distribution Actions (IODA) (Sheidlower et al., 2024), showing that Euclidean distance does not reliably reflect semantic similarity of robot states when mapping out-of-distribution (OOD) states to in-distribution (ID) states.

Tufts University

Medford, MA

*Undergraduate Research Assistant**Jan 2023 - May 2024*

Advisor: Professor Chris Rogers

- Conducted research in the Center for Engineering Education and Outreach (CEEEO) on building interfaces for educational LEGO robots with PyScript.
- Collaborated with Anaconda to test and improve PyScript for educational robotics and data visualization.
- Developed a LabVIEW-like browser interface to run Python subroutines, visualize data, and create interactive widgets to control LEGO SPIKE-Prime robot behaviors.

INDUSTRY EXPERIENCE

Tatum Robotics

Boston, MA

*Senior Capstone Project**Sep 2025 - Present*

- Develop a Dockerized tool that converts English text into Tactile American Sign Language, enabling DeafBlind users to access web-based services (e.g., news, websites, weather, etc.) from the Tatum1 robot's tactile finger-spelling system.

Analogic Corporation

Peabody, MA

*Software Engineering Co-op**Aug 2025 - Dec 2025*

- Implement a network architecture to support cross lane remote image analysis and system monitoring for CT scanners.