Miranda Mittleman

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EDUCATION

University of Michigan, *College of Engineering* — **Ann Arbor, MI**

Doctor of Philosophy in Robotics — Aug. 2025 - Dec. 2028 (expected)

- GPA: 3.9/4.0
- Awards: Draper Scholar Fellowship

Masters of Science in Robotics — Aug. 2023 - May 2025

- GPA: 3.9/4.0
- Awards: Ehrenberg Fellowship

Trinity University — **San Antonio, TX**

Bachelor of Science in Engineering Science, Minor in Mathematics — Aug. 2019 - May 2023

- GPA: 3.7/4.0
- Awards: Cum Laude, Dean's List (Spring 2021 - Spring 2023), Murchison SURF(Summer 2022)

RESEARCH & WORK EXPERIENCE

Stirling Research Group — **Ann Arbor, MI**

Graduate Research Assistant — May 2025 - Present

- Researching wearable technology for rehabilitation to aid older adults aging-in-place lifestyle

University of Michigan Student Instructor — **Ann Arbor, MI**

Graduate Student Instructor — Jan 2025 - April 2026

- Worked as the primary student instructor for ROB 204 and IOE 535 with Dr. Leia Stirling and ROB 340 with Dr. Alves-Oliveira
- Responsible for developing lab materials, holding office hours, running lab sections, and grading.

Robotics Department Course Development — **Ann Arbor, MI**

Education Research Assistant — May 2024 - Dec 2024

- Developed lab concepts for two core Robotics undergraduate courses.
- Piloted lab ideas with fabricated design embodiments and custom software.

Barton Research Group — **Ann Arbor, MI**

Graduate Researcher — Jan. 2024 - Aug. 2024

- Implemented a Digital Twin framework for predictive health monitoring for a 3D printer.
- Built a software structure to complete data collection and analyze data.

Treadway Lab — **San Antonio, TX**

Undergraduate Researcher — Jan. 2021 - May 2023

- Investigated nuances in haptic communication during social dance behavior.
- Fabricated and tested an Arduino-based pressure sensor circuit for data collection with participants.

Ruggiero Research Lab — **Burlington, VT**

Undergraduate Researcher — May 2021 - Aug 2021

- Implemented a terahertz spectroscopy setup to investigate subsurface layers in paintings

PUBLICATIONS

- Jebri, S., Mittleman, M., Rathi, A., Carender, W., Stirling, L., and Sienko, K. H. (2026). From Rationales to Recommendations: Translating Physical Therapists' Decision-Making into Human-Centered Rehabilitation Technologies (In Prep)

- Mittleman, M. (2026). Characterizing Clinician Decision-Making by Leveraging Psychometric Parameter Estimation (In Prep)
- Stirling, L. (2025, June). Reinforcing Learning Objectives through Hands-on Labs for University of Michigan's ROB 204: Introduction to Human-Robot Systems. In *2025 ASEE Annual Conference & Exposition*. 10.18260/1-2--57123.
- Mittleman, M.; Sarbah, A; Scannell, S.; and Sharpe, J., "Final Project Report for Bricks from Recyclables" (2023). *Engineering Senior Design Reports*. 59. https://digitalcommons.trinity.edu/engine_designreports/59

ACADEMIC PROJECTS

University of Michigan Projects **Ann Arbor, MI**

Aug. 2023 - May 2025

- Developed autonomous mobile robotics system that can navigate mazes
- Implemented multiple pick-n-place based algorithms using camera sensing and a 5-DOF arm
- Upgraded an existing motorized cat stuffed animal to sense touch and respond to haptic feedback
- Created a system to understand how a medical robot might estimate forces solely through motor dynamics
- Researched the feasibility of self-assessment for physical therapy through a case-study of marching band performance

Trinity University Design Projects **San Antonio, TX**

Aug. 2019 - May 2023

- Designed the methods for a machine to recycle plastic and repurpose it as construction material
- Built and tested an automatic/manual control laser cat toy
- Fabricated a collaborative tilting maze children's toy
- Designed, prototyped, and tested a medieval-style catapult, capable of launching a racquet ball 40 feet.

ADDITIONAL

- **Programming Languages:** C, C++, Python, JavaScript, HTML
- **Software:** Microsoft Suite, Matlab/SIMULINK, Arduino, Autodesk Fusion 360, Adobe Photoshop, Adobe Creative Cloud, ImageJ, GIMP, Yost Labs Motion Capture, Quartus, R, ROS, Cura, Creality
- **Community Engagement:** Executive board member of Queer-Straight Alliance of Robotics (2025-Present), Member of the Robotics Outreach Board (2025-Present), Robotics MS GSAC Representative (2023-2024), Partial Differential Equations Teaching Assistant (Spring 2023), President of American Institute of Chemical Engineers Trinity Chapter (2022-2023)
- **Hobbies/Interests:** Origami, Stray cat welfare, Film scores, Crochet, Nail art.