Andrew Thompson

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Education

- Ph.D. in Mechanical Engineering, Northwestern University, Evanston, IL **Ongoing**
- Master of Science in Robotics, Northwestern University, Evanston, IL **Dec 2019**
- Bachelor of Science in Physics, Indiana University, Bloomington, IN **May 2017**
- Bachelor of Art in Folklore/Ethnomusicology, Indiana University, Bloomington, IN **May 2017**

- **Coursework:** Classical Mechanics, Dynamics, Thermodynamics, Digital Electronics, Biological Physics, Embedded Systems, Mechatronics, Feedback Systems and Control, Cardiovascular Instrumentation, Prosthetic Limb Design and Control, Soft Robotics, Multi-axis Robotic Systems, Machine Learning, Artificial Intelligence, Active Learning

Relevant Skills

- **Languages:** C/C++ (*intermediate*), Python (*advanced*), Mathematica (*intermediate*), Matlab (*intermediate*), JavaScript (*beginner*)
- **Software:** Matlab/Simulink (*intermediate*), ROS (*advanced*), ROS2 (*beginner*) rviz (*beginner*), LaTeX (advanced), Autodesk (*beginner*), Ubuntu/Linux (*intermediate*), MS Office Suite (*advanced*)
- **Hardware:** Circuit Design (*intermediate*), Maintenance (*intermediate*), 3D Printing/Prototyping (*intermediate*), Precision Measurements and Drafting (*intermediate*)

Related Project Experience

Northwestern University, Research and Publications

- A. Thompson, L. Y.C. Loke, and B. Argall. "Control Interface Remapping for Bias-Aware Assistive Teleoperation." arXiv preprint arXiv:2205.08489 (2022). To be included in *IEEE International Conference on Rehabilitation Robotics 2022*.
- D. Gopinath, A. Thompson, and B. Argall. "Information Theoretic Intent Disambiguation via Contextual Nudges for Assistive Shared Control." To be included in *International Workshop on the Algorithmic Foundations of Robotics 2022*

Northwestern University, argallab

- Helped lead refactoring the lab's canonical powered wheelchair autonomy codebase.
- Designed (CAD) an icosahedral cage for a lab member's study involving reaching tasks
- Hosted a booth at the Museum of Science and Industry's Robot Block Party 2022

Northwestern University, MSR Projects

- Designed, assembled, tested, and documented a human-controlled (via Bluetooth) hexapod (6-legged) robot, including the development and programming of a bio-inspired gait cycle.
- Built and recorded with an electrocardiogram device in a two-person team.
- Programmed dynamic simulation of two-legged rappelling robot.
- Developed novel, hybrid soft actuator (MMVS + McKibben muscle).
- Collaborated with teammates using ROS and ultrasonic range sensors to program a Baxter robotic arm to play human-interactive Pong.

Related Work Experience

Internship

Intelligent Automation, Inc., Rockville, MD **June 2019 – August 2019**

- Participated in the REMS group on several R&D projects involving dynamics, haptics, and sensor fusion.

Research Assistant/Lab Manager

de Ruyter Lab, Bloomington, IN **May 2016 – Aug 2018**

- Completed updated compilation of lab materials providing online accessibility.
- Bred, maintained and performed experiments on model organisms (C. Vicina) for electrophysiological research.
- Applied statistical methods using C++ and Matlab to generate stimuli, conduct analysis and produce reports and educational material.