

ARTEMIS SHAW

Robotics Researcher · Embedded Systems Engineer · NSF GRFP Fellow
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EDUCATION

University of Colorado Boulder

Ph.D. in Computer Science (Robotics)

– **Advisors:** Prof. Nikolaus Correll, Prof. Alessandro Roncone

Fellowship: 2026 NSF Graduate Research Fellowship Program

Boulder, CO

Incoming Aug. 2026

University of Colorado Boulder

B.S. in Computer Science

– **GPA:** 3.81 / 4.0 (Magna Cum Laude) **Honors:** Dean's List (2024–2025) · NSF Student Representative Nominee (2023)

Boulder, CO

Aug. 2021 – May 2025

PUBLICATIONS & MANUSCRIPTS

A. Shaw, C. Liu, J. Costa, R. Gray, A. Skowronek, K. Diaz, N. Bui, N. Correll. “Cutting the Cord: System Architecture for Low-Cost, GPU-Accelerated Bimanual Mobile Manipulation.” Preprint. arXiv:2603.09051.

S. Kim, **A. Shaw**, H. Dinh, N. Bui. “EchoVision: Hybrid NPU-CPU Deployment of EfficientViT-SAM and YOLO for Real-Time Assistive Navigation.” Accepted, EIFCOM 2026.

M. Conway, **A. Shaw**, N. Correll. “High-Resolution Tactile Sensing for Intelligent Humanoids.” Oral presentation, Rocky Mountain AI Interest Group, Nov. 2025.

ACADEMIC SERVICE & MENTORSHIP

Simulation of Adaptive Behavior (SAB)

Peer Reviewer

– Reviewing submissions for the International Conference on Simulation of Adaptive Behavior (Springer / LNAI), covering adaptive autonomous systems and biologically-inspired robotics.

Remote

May 2026

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Peer Reviewer

– Reviewed submissions on manipulation, tactile sensing, and embedded robotic systems.

Remote

Apr. 2026

IEEE Transactions on Robotics (T-RO)

Peer Reviewer

– Invited reviewer; evaluated manuscripts on sensing, control, and human-robot interaction.

2025 – Present

Correll Laboratory

Undergraduate Research Mentor

– Mentoring two undergraduates on firmware, experimental design, and XLeRobot-Pro validation.

Boulder, CO

Sep. 2025 – Present

RESEARCH EXPERIENCE

d’Arbeloff Laboratory, MIT

Research Intern

- Running an EMG-based human-subjects study of a handlebar simulator designed to support balance and mobility in older adults, targeting a paper for *IEEE Transactions on Medical Robotics and Bionics* (T-MRB).
- Developed signal-processing scripts to analyze and filter EMG data, isolating muscle-activation signals from motion and noise.
- Conducted IRB-approved human-subjects experiments with 25 participants, managing protocol compliance, data collection, and consent procedures.

Cambridge, MA

Jun. 2026 – Present

Correll Laboratory, CU Boulder

Graduate Robotics Researcher

- Developing high-resolution tactile sensors and adaptive control for the Unitree H1 humanoid.
- Designed XLeRobot-Pro’s Tri-Bus power topology to isolate the Jetson Orin Nano from motor transients, eliminating brownouts and enabling fully untethered GPU operation at under \$1300.
- Benchmarked XLeRobot-Pro on ACT, Diffusion Policy, and SmolVLA; platform deployed as primary hardware in two CU Boulder graduate courses.
- Co-authoring an NIH R21 proposal with Prof. Pam Qian: learning sterility constraints from 380 nurse videos (Houston Methodist) for constraint-compliant CLDC execution via MPC on the Franka arm.
- Lead mechanical engineer on IonSpiro: designing airflow-directing components and applying fluid dynamics to compute clinical-grade breathing rates.
- Architecting Bluetooth firmware for real-time data transmission; enforcing biocompatibility and sterility compliance for pediatric deployment at Children’s Hospital Colorado, in collaboration with Prof. Tam Vu (Dartmouth College).

Boulder, CO

Sep. 2025 – Present

HiRO Lab (Human Interaction & Robotics), CU Boulder

Graduate Robotics Researcher

Boulder, CO

Mar. 2026 – Present

- Benchmarking GenTact-Prox self-capacitive sensors via the *GenTact* toolbox; evaluating repeatability across hysteresis, drift, proximity response, and accuracy for perisensory contact anticipation on the Franka Research 3.
- Developing TouchIQ, an online tactile adaptation framework: characterizing ToF wavelength distributions across materials via Kalman filtering and simulating grasping on the H1 Inspire hands with École de technologie supérieure.
- Co-developing tactile-driven HRI research with Sarah Gillet (Prof. Breazeal, MIT Media Lab) on affective and functional touch in human-robot interaction.

Mobile Networks Systems Lab, CU Boulder

Embedded Systems Research Intern

Boulder, CO

Jun. 2022 – Mar. 2024

- Developed C++ firmware for wearable pediatric sensors (<0.06% error rate); deployed at Children's Hospital Colorado in support of FDA submission.
- Executed clinical fault detection, calibration, and sensor qualification; maintained FDA-compliance documentation throughout the device validation pipeline.

INDUSTRY EXPERIENCE

Medtronic & CU Boulder

Embedded Systems Engineer & Project Lead (Capstone)

Lafayette, CO

Sep. 2024 – Apr. 2025

- Architected multi-axis PID firmware for a 6-DOF surgical arm with ArUco-based pose estimation achieving sub-millimeter precision.
- Integrated CV pipeline for surgical scene understanding and camera-to-motion translation; led 6-member team as Scrum Master under Medtronic engineering oversight.

TEACHING EXPERIENCE

Code Advantage

Technical Instructor

Remote / Boulder, CO

2021 – Present

- Delivered project-based programming curricula to K-12 students, focusing on computational thinking and logic.
- Taught core concepts of Object-Oriented Programming (OOP) and game development using Java and Python.
- Adapted complex technical concepts into digestible lessons for diverse age groups and skill levels.

LEGO Robotics & Engineering Workshop

Lead Instructor

2018 – 2021

- Designed and delivered a 3-year technical curriculum to over 50 students, focusing on mechanics and sensor integration with LEGO EV3.
- Trained student teams in foundational programming and iterative engineering design principles.

HONORS & AWARDS

NSF Graduate Research Fellowship (GRFP) Fellow, 2026 — one of ~2,000 awarded nationally across all STEM fields

1st Place, HackCU 2025 — BlockVision real-time depth-to-voxel reconstruction framework

P.E.O. STAR Scholarship, 2020 — merit-based national award for women in higher education

TECHNICAL SKILLS

Programming: C/C++, Python, MATLAB, Java, SQL, LaTeX

Robotics & Hardware: ROS2, NVIDIA Jetson Orin, Arduino/ESP32, MuJoCo, 3D Printing, PID Control, Sensor Fusion

Vision & Sensing: OpenCV, ArUco, EfficientViT, YOLO, ToF Sensing, Signal Processing

Tools: Git, Docker, Linux, Oscilloscopes, Logic Analyzers

Certifications: Certified IRB Professional · Certified ScrumMaster (CSM) · Agile Certified Practitioner (PMI-ACP)