

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.” Under review, IEEE/RSJ IROS 2026.

A. Shaw[†], L. Lam[†], H. Dinh, A. Nguyen, N. Correll, R. Deterding, N. Bui. “IonSpiro: High-Performance Spirometer with Dual-Mode Ion-Sensing and Active Self-Sanitization.” In preparation, target: ACM SenSys 2026. ([†]Equal contribution)

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.” Rocky Mountain AI Interest Group, Nov. 2025.

C. Escobedo, A. Shaw, et al. “GenTact: Reproducible, Multi-Modal, and Scalable Whole-Body Tactile Sensing Across Robot Embodiments.” In preparation, target: *Science Robotics*.

A. Shaw et al. “TouchIQ: Online Tactile Adaptation for Robotic Manipulation via ToF-Based Sensing.” In preparation, target: IEEE/RSJ ICRA 2026.

ACADEMIC SERVICE & MENTORSHIP

IEEE/RSJ 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

HiRO Lab (Human Interaction & Robotics)

Graduate Researcher

- 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.

Boulder, CO

Mar. 2026 – Present

InsCy Lab

Lead Researcher, Mechanical Engineer & First Author

- Lead mechanical engineer on IonSpiro: designing airflow-directing components and applying fluid dynamics to compute clinical-grade breathing rates.

Boulder, CO

Jan. 2026 – Present

- 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).

Correll Laboratory

Lead Robotics Researcher & First Author

Boulder, CO
Sep. 2025 – Present

- 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.

Mobile Networks Systems Lab

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 & Scrum Master (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 & LEADERSHIP

CodeAdvantage

Programming Instructor

Denver, CO
Aug. 2021 – Jun. 2022

- Designed and taught project-based Python, Scratch, and robotics curricula to K-12 students in-person and online.
- Developed differentiated lesson plans guiding students from zero experience to building and programming physical robots.

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)