

CALVIN STAHOVIK

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Active DOE L Clearance

Master's graduate in Computer Science with expertise in autonomous robotics, AI, and ROS-based development. Experience in reinforcement learning for robot control, supervised learning tasks, robotic manipulation, computer vision tasks, and CUDA optimization. Strong desire for research/engineering career in robotics or machine learning.

EDUCATION

University of New Mexico

Aug. 2023 – Dec. 2025

Master of Science in Computer Science, GPA: 3.83

Albuquerque, NM

- **Thesis (awarded distinction):** *Dynamic Admittance Parameterization for Non-Prehensile Multi-Robot Transport with Optimal Coordinated Planning*

University of New Mexico

Aug. 2018 – May 2022

Bachelor of Science in Computer Science

Albuquerque, NM

EXPERIENCE

Research and Development Graduate Intern

June 2024 – Present

Sandia National Laboratories

Albuquerque, NM

- Setup an April-Tag and PID-based outdoor experimental testbed to benchmark gesture recognition algorithms on mobile robots, evaluating reliability and accuracy across multiple platforms [2].
- Trained a physics-informed deep neural network and novel localization algorithm to rapidly estimate mechanical constraints of objects for robust autonomous robotic manipulation[3].
- Developed end-to-end multi-behavior policy for quadrotor control using modern reinforcement techniques.

Graduate Research Assistant

Aug. 2023 – Dec. 2025

University of New Mexico (with Prof. Melanie Moses)

Albuquerque, NM

- Performed research on autonomous cooperative transport using a mobile robot platforms with fixed manipulator arms. Developed hybrid admittance-impedance control and optimal coordinated planning approaches [1].
- Research involved full-stack robot development, mechanical prototyping and assembly, manipulator integration, SLAM-based localization, and pose-estimation pipelines.
- Managed a team of undergraduate researchers by defining roadmaps, allocating tasks, and presenting weekly progress updates to faculty advisors.

Research and Development Undergraduate Intern

Apr. 2019 – Aug. 2022

Sandia National Laboratories

Albuquerque, NM

- Implemented low-level motor controllers for skid-steer mobile robots using MATLAB and Arduino.
- Developed a novel real-time RGBD-based detection, segmentation, and localization ROS package using YOLO and OpenCV. CUDA acceleration enabled sub-frame inference on a single GPU [4].

TECHNICAL SKILLS

Languages: C++, CUDA, C, Python, Bash, MATLAB, Java, HTML, CSS, Haskell, XML

Robotics: ROS, Isaac Sim/Lab Gazebo, SLAM, Admittance/Impedance Control, Occupancy Mapping, Motion Planning

Machine Learning: PyTorch, TensorFlow, YOLO, scikit-learn, MLFlow, Optuna, Reinforcement Learning

Computer vision: OpenCV, Point Cloud Processing, OpenGL

Hardware: RGBD Sensors, April-Tag, Mobile Robot Platforms, Robotic Manipulators, Low-Level Sensor I/O

Developer Tools: Git, Conda, Linux, VS Code, Simulink, SLURM, Firebase, Flutter, Claude Code

Other: JLPT (~N3)

PUBLICATIONS

- [1] **Stahoviak, C.** et al., “Dynamic Admittance Parametrisation of Non-Prehensile Multi-Robot Transport with Optimal Coordinated Planning,” *MECC*, 2026. (*in preparation*)
- [2] Stocco, P. et al., “Reliability of Mobile Camera-Based Hand Sign Recognition in Outdoor Environments,” *MECC*, 2026. (*in preparation*)
- [3] Kim, R. et al., “Perceived Constraint Identification Using Physics-Informed Deep Neural Networks,” *ASME LDSC*, 2025.
- [4] Young, C. et al., “Rapid Constrained Object Motion Estimation based on Centroid Localization of Semantically Labeled Objects,” *AIM*, 2024.