Calvin James Stahoviak

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Active DOE L Clearance

Roboticist at Sandia National Laboratories with an M.S. in Computer Science, building computer vision, reinforcement learning, and control systems for autonomous robots. Published in robotic manipulation and multi-robot transport.

Education

University of New Mexico — Albuquerque, NM

Master of Science in Computer Science, GPA: 3.83 — *Aug. 2023 – Dec. 2025*

- Thesis awarded distinction [1].

Bachelor of Science in Computer Science — *Aug. 2018 – Dec. 2022*

Experience

Sandia National Laboratories — Albuquerque, NM

Member of Technical Staff — *Aug. 2026 – Present*

- Own computer vision (detection, tracking, localization) for robotic automated-assembly systems, and support vision work across other robotics and AI research projects.
- Contribute to funded research in AI-driven robotic assembly, adversarial ML, and RL-based quadrotor control.

Research and Development Graduate Intern — *June 2024 – Aug. 2026*

- Designed an outdoor reliability benchmark for camera-based hand-sign recognition on a quadruped robot [2].
- Developed and trained a physics-informed neural network that rapidly identifies the linear and rotational constraints on an object's motion for robotic manipulation, with under 1° of error on three real mechanisms [3].

University of New Mexico — Albuquerque, NM

Graduate Research Assistant (with Prof. Melanie Moses) — *Aug. 2023 – Dec. 2025*

- Designed, built, and wrote the full software stack for two mobile manipulators; developed dynamic admittance control and optimal coordinated planning for autonomous cooperative transport [1].
- Led two undergraduate researchers: set the project roadmap, assigned tasks, and delivered milestones to advisors.

Sandia National Laboratories — Albuquerque, NM

Research and Development Undergraduate Intern — *Apr. 2019 – Aug. 2022*

- Implemented low-level PID control for skid-steer mobile robots in MATLAB and Arduino, integrated with ROS.
- Developed a novel RGBD-based detection, segmentation, and localization ROS package using YOLO and OpenCV, with CUDA acceleration running it in real time on a single GPU [4].

Technical Skills

Languages: C++, CUDA, C, Python, Bash, MATLAB, Java, HTML, CSS, Haskell, XML
Robotics: ROS, Isaac Sim, 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, AprilTag, Mobile Robot Platforms, Robotic Manipulators, Low-Level Sensor I/O
Developer Tools: Git, Package Managers, Linux, VS Code, Simulink, SolidWorks, SLURM, 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. *(accepted)*

[2] Stocco, P. et al., "Reliability of Mobile Camera-Based Hand Sign Recognition in Outdoor Environments," *MECC*, 2026. *(accepted)*

[3] Kim, R. et al., "Perceived Constraint Identification Using Physics-Informed Deep Neural Networks," *ASME LDSC*, 2026.

[4] Young, C. et al., "Rapid Constrained Object Motion Estimation based on Centroid Localization of Semantically Labeled Objects," *AIM*, 2024.