Nicholas W. Sutton

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Experience

Undergraduate Robotics Researcher May 2025 – Present

Hybrid Intelligent Experimental Robotics (HIER) Lab - North Carolina State University *Raleigh, NC*

- Developed a Python teleoperation system for the Unitree Go2 quadrupedal robot, processing real-time motion capture data from a 6-camera OptiTrack system at 240Hz
- Designed a Temporal Convolutional Neural Network, achieving 95.46% accuracy in classifying 8 human gait modes from 34 biomechanical features derived from motion capture data
- Implemented causal TCN architecture with dilated convolutions and attention mechanisms, outperforming baseline CNN models by 6% for real-time gait classification
- Deployed the TCN model on the Unitree Go2 for real-time gait-based control selection, and developed an adaptive PD control scheme to enable high-fidelity motion imitation

Projects

Fetch-MC | Rust*, Tokio, Clap*

- Built a Rust CLI tool to automate Minecraft mod management by parsing TOML configs and fetching version-compatible add-ons via the Modrinth API
- Implemented asynchronous API requests using Tokio to enable concurrent fetching of multiple mods, reducing download time for large modpacks

Munchie Bot | *Python3, PlayWright, Discord.py, Asyncio*

- Engineered an automated Discord bot serving users with real-time Epic Games promotion alerts, reducing manual monitoring effort and ensuring zero missed opportunities
- Implemented asynchronous web scraping architecture to parse JSON and HTML data from Epic Games, achieving non-blocking data retrieval and consistent uptime

Technical Skills

- **Languages:** *C/C++, Rust, Python, Julia, Go, Java*
- **Technologies:** *ROS2,* PyTorch, *OpenCV, Numpy, Mujoco, Git, Linux, Docker*

Education

North Carolina State University Raleigh, NC

Bachelor of Science in Computer Science (Honors), Minor in Mathematics | *GPA: 3.745* *May 2027*

Selected Coursework: Data Structures & Algorithms, Operating Systems, Software Engineering, Machine Learning, Artificial Intelligence, Robot Learning, Robot Motion Planning

Honors: Dean's List, Computer Science Honors Program

Extracurricular Activities

Webmaster and Technical Committee Lead Nov. 2025 – Present

Association for Computing Machinery at North Carolina State University *Raleigh, NC*

- Designed and maintained the ACM chapter website
- Led the Technical Committee in organizing and executing collaborative coding projects
- Organized technical talks and hands-on coding workshops

Peer Mentor and Computer Science Tutor Aug. 2025 – Present

Goodnight Scholars Program *Raleigh, NC*

- Mentored transfer students through academic transition via one-on-one meetings and resource guides covering course selection, campus navigation, and social integration
- Provided peer tutoring in upper-level CS courses, including Software Development, Operating Systems, Algorithms, Computational Theory, and Robotics

Awards and Honors

Goodnight Scholars Program | Transfer Scholar

A Full-Ride Scholarship program at North Carolina State University that provides opportunities for community service, professional development, and personal growth for low- and middle-income students majoring in STEM.