

ANDREW GERSTENSLAGER

MS Computer Science Student | Data Science & Robotics Engineer

+1 (330)-696-3493 | andrewgerstenslager.com | andrewgerstenslager@gmail.com | linkedin.com/in/andrew-gerstenslager
github.com/AndrewGerstenslager

EDUCATION

University of Cincinnati

Master of Science - Computer Science

Expected May 2025 | Cincinnati, OH

- GPA: 3.88

University of Cincinnati

Bachelor of Science - Computer Engineering

May 2024 | Cincinnati, OH

- GPA: 3.71 | Minor: Finance

EXPERIENCE

Data Science & Engineering Co-Op

84.51°

August 2022 – August 2023 | Cincinnati, OH

- Data Science Co-Op (May 2023 – August 2023):**
 - Implemented a LSTM-based anomaly detection Python package using TensorFlow autoencoders.
 - Designed and optimized the package flow for seamless integration, while reducing GPU runtime training costs by over 80%.
 - Led product owner meetings to demonstrate anomaly detection use cases for data analysis.
- Data Engineering Co-Op (August 2022 – December 2022):**
 - Contributed to internal Python tools for household matching package, focusing on privacy compliance.
 - Rewrote internal API from Flask to FastAPI, enhancing performance and aligning with company standards.
 - Developed client-facing Angular features and updated Terraform configurations to update dependencies.

Computer Engineering Co-Op

L3Harris Technologies

May 2020 – May 2022 | Cincinnati, OH

- Completed 4 semester-long rotations working on the test equipment team developing C# .NET applications for circuit board testers.
- Devised machine learning system for manufacturing failure prediction for environmental stress tests using Scikit-learn.
- Migrated team's main version control from SVN to Git.
- Documented test equipment hardware and software using 3D models, BOMs, and Doxygen.

President - UC Robotics Team

August 2020 – August 2022 | Cincinnati, OH

- Led a team of 20 members in designing and building autonomous robots for the Intelligent Ground Vehicle Competition (IGVC).
- Upgraded the robot's software from ROS1 to ROS2, enhancing performance and reliability.
- Managed project timelines, coordinated team efforts, and introduced agile methodologies to track progress.
- Currently a graduate student advisor for the team

ACHIEVEMENTS

- Best Presentation Award - 49th Dayton-Cincinnati Aerospace Sciences Symposium (2024)
- Revolution UC Hackathon: First Place, Best AWS Use, Best Data Science - CHAAP Browser Extension (2024)
- Eagle Scout (2019)

SKILLS

- Robotics:** ROS2, Navigation Stack (NAV2), SLAM, Motion Planning, State Estimation, Control Systems
- Simulation & Testing:** Gazebo, Pygame, Webots, Digital Twin Development, Robot Behavior Testing
- Perception & AI:** Computer Vision (OpenCV), LiDAR Processing, Imitation Learning, Deep Learning (TensorFlow)
- Systems:** Arduino, Raspberry Pi, Nvidia Jetson, Sensor Integration, Motor Control, Real-time Systems
- Development:** C++, Python, Git, Docker, CI/CD, Linux/Unix, Neovim, Tmux

RESEARCH

Bio-Inspired Robot Navigation & Localization | Master's Thesis

- Developing vision-based localization using CNN autoencoder embeddings integrated with place cell neural models
- Experimenting with multi-scale hierarchy of neuron representation of localization and navigation
- Technology:** TensorFlow | ROS2 | Computer Vision

Multi-Modal Navigation for Subterranean Rescue | Published in arXiv 2024

- Developed CNN-DNN fusion network for autonomous navigation in simulated cave environments
- Implemented imitation learning using LiDAR and camera data for goal-oriented navigation
- Validated model robustness through Monte-Carlo testing with 80% success rate
- Technology:** Deep Learning | CNN | LiDAR | Simulation

PROJECTS

Dokalman - Autonomous Vehicle | UC Robotics Team

- Led development of ROS2-based autonomous navigation system for IGVC competition robot
- Implemented comprehensive system architecture including motor control, sensor integration, and path planning
- Developed image processing pipelines using OpenCV for real-time object detection
- Established robust networking infrastructure for field operations and remote management
- Technology:** ROS2 | Python | OpenCV | NAV2 | Linux

Place Cell Navigation System | Senior Design

- Implemented bio-inspired place cell neural model for robot navigation in physical robot using ROS2
- Integrated system with iRobot Create3 for real-world use
- Technology:** Neural Networks | ROS2 | Python