

Kailey Smith

1101 Grove St. Apt. 6C • Evanston, IL 60201 • (815) 514-1043 • kaileysmith2021@u.northwestern.edu
Portfolio: <https://gingineer95.github.io/> • Github: <https://github.com/gingineer95>

EDUCATION

Northwestern University, Evanston IL
Master of Science in Robotics

Dec. 2021 (expected)

Milwaukee School of Engineering, Milwaukee WI
Bachelor of Science, Mechanical Engineering

May 2017

WORK EXPERIENCE

Spraying Systems Co.

Jun. 2017 – Aug. 2020

Project Engineer

- Led a 3 person team that installed and programmed a FANUC 6-axis robotic arm, conveyor, and ancillary equipment.
- Used an upstream camera to classify different moving products, no matter the placement.
- Adjusted robots' EOA nozzle to coat each product according to identification and orientation.

Electro Motive Diesel

Jun. 2015 – Aug. 2015

Summer Intern

- Organized 10,000 preventative maintenance metrics based on Trade and Job Plan from MAXIMO
- Identifying the most frequent and time-consuming inspections to improve productivity.

ACADEMIC PROJECTS

Multi-robot SLAM and Autonomous Exploration

SLAM Toolbox, Localization, Autonomous Exploration, C++

- Using simultaneous localization and mapping on multiple robots produce a single, consolidated map.
- Implementing a map merging algorithm in C++ to combine multiple robot maps.
- Developing a multi-robot exploration algorithm to guide map merge generation.

Baxter Recycling Segmentation

MoveIt!, Robot Manipulation, Motion Planning, Computer Vision, Python

- Collaborated with a team of 4 to program a Baxter robot to recycle bottles and cans separately.
- Implemented computer vision algorithm using OpenCV for real-time location detection and segmentation of randomly placed objects.
- Used MoveIt! for pick and place operation by picking bottles and cans from a surface and dropping them into their respective recycling bins.

Rapidly-Exploring Random Tree (RRT)

Path Planning, Obstacle Avoidance, Python

- Implemented a RRT path planning algorithm in Python.
- Programmed collision avoidance functionality of randomly placed obstacles in a 2D domain.

SKILLS

Programming Languages: C++, C, Python, MATLAB

Developer Tools: Linux, Version Control (Git), Unit Test, CMake

Robotics: Robot Operating System (ROS), SLAM, MoveIt!, Robot Manipulation, Motion Planning, Gazebo, Computer Vision, OpenCV, Machine Learning

Mechanical: Autodesk, SolidWorks, 3D printing