Kailey Smith

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EDUCATION

Northwestern University, Evanston IL — **Sept. 2020 - Dec. 2021**
Master of Science in Robotics

Milwaukee School of Engineering, Milwaukee WI — **Sept. 2013 - May 2017**
Bachelor of Science, Mechanical Engineering

ACADEMIC PROJECTS

Multi-robot SLAM and Autonomous Exploration — **Jan. 2021 - Present**
SLAM Toolbox, Localization, Autonomous Exploration, Gazebo, C++
- The goal is to employ slam toolbox on multiple Turtlebot3s to autonomously explore a space given unknown initial robot positions.
- Currently modifying a map merging algorithm for use with multiple Turtlebot3 local maps.

Baxter Recycling Segmentation — **Nov. 2020**
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.
- Applied OpenCV for real-time location detection and segmentation of randomly placed objects.
- Utilized MoveIt! to pick objects from the table and drop them into their respective recycling bins.

Rapidly-Exploring Random Tree (RRT) — **Sept. 2020**
Path Planning, Obstacle Avoidance, Python
- Implemented a RRT path planning algorithm with collision avoidance of randomly placed obstacles in a 2D domain.

PROFESSIONAL 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.
- Taught 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 to identify the most frequent and time-consuming inspections and improve productivity.

Thomson Reuters — **Jun. 2014 – Aug. 2014**
Summer Intern
- Updated 100+ start-up configuration names to be uniform in both Java and C++.
- Created a superset of the 100+ start-up configurations that was used for both Java and C++.
- Led development of a new tool in Java to convert old configuration names to updated names.

SKILLS

Software: C++, Python, C, Autodesk/SolidWorks, MATLAB
Robotics: Robot Operating System (ROS), Linux, Git, SLAM, MoveIt!, Robot Manipulation, Gazebo, Motion Planning, Computer Vision