Nick Spears

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Objective

To obtain employment in the field of Robotics Software Engineering.
Available from Early June 2024.

Education

Rochester Institute of Technology, Rochester, NY (2020-2024)
Bachelor of Science
Robotics & Manufacturing Engineering Technology
Cumulative GPA: 3.89; *summa cum laude*

Skills

Expert: Python, Git, C++, OpenCV, Anaconda, Autodesk Inventor, Fusion 360, CATIA V5, SolidWorks (associate cert.), Six Sigma (Green Belt), 3D Printing, Studio 5000
Skilled: ROS2, ABB Robot Studio, MATLAB, CNC, Minitab, LabVIEW
Familiar: COGNEX, YOLOv5, AutoCAD, Docker, GD&T, French (working proficiency)

Employment

Golisano Institute for Sustainability, Rochester, NY (January 2023 – May 2024)
Robotics Software Engineering Co-Op
- Responsible for the development of the institute's robotics initiative using a UR10e Cobot in a remanufacturing operation for automotive fuel injectors and brake shoes.
- Presented demonstrations to industry professionals and prospective partners.
- Managed tech stack, version control, testing, and stability of the CoreID project.
- Created a robotics demo for Imagine 2023 & 2024 to promote I4.0 and GIS.

Alstom Transport, Hornell, NY (May 2022 – December 2022)
Mechanical Engineering Co-Op
- Created 3D designs and 2D deliverables according to Alstom's standards.
- Performed detailed design on internal mechanical and electrical train subsystems.
- Proposed design-to-cost modifications with projected savings of $100k over 5 years.
- Rebuilt maintenance manuals according to updated changes, requiring close work with the customer and saving Alstom $70,000.

Projects

Core Identification (April 2023 - August 2023)
Created a work cell to autonomously sort used automotive parts from a conveyor using machine learning to classify parts by manufacturer, part number, and surface quality. Developed software for robot, conveyor, and the machine vision systems in Python. Established method to translate vision system data to workspace coordinate data and methods to optimize end-effector interactions with angled & ornate parts. Created interfaces for using multiple vision models for dynamic applications.

CITADIS Electrical Locker Redesign (July 2022 -October 2022)
Redesigned the under-desk electrical equipment of the Canadian Citadis Spirit LRV train line to accommodate added components; requiring changes to brackets, terminal block stacks, and accompanying electrical lockers to satisfy design requirements and improve manufacturability and satisfy code.

Activities

Multidisciplinary Robotics Club, RIT, Rochester NY
Mechanical Design Team Lead (August 2021 – May 2024)
Designed a quadruped hip and leg assembly using Fusion 360. Leading the mechanical design team for 16 months, managed 8 group members, parts acquisition, and assembly of the prototype leg and hip for our pneumatic quadruped robot.

Interests

Hang gliding, cycling, succulent gardening, coffee, and running.