Aidan Reilly

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Experience

Robotics Software Engineer Intern 05/2024 - present
Komatsu Mining *Warrendale, PA*

- Developed autonomous vehicle software for underground mining in complex, GPS-denied environments
- Implemented perception and navigation within Unreal Engine 5 using ROS2, LiDAR, RADAR, and Odometry

Robotics Software Engineer Intern 05/2023 - 08/2023
Komatsu Mining *Warrendale, PA*

- Developed the core autonomy stack for underground mining vehicles, focusing on perception to map out mines and localize robots, and control for autonomous navigation
- Simulation of autonomous vehicles increased operational efficiency by 30%, potentially decreasing labor costs and increasing annual revenue by $800 million.
- Increased simulation performance by 8x through GPU parallelization, dramatically decreasing development time and expediting real-world testing
- Strong experience in software development, writing clean code, maintaining and organizing code databases, and producing detailed documentation
- Utilized ROS2, C++, Python, Linux, LiDAR, Docker, Azure DevOps, and various other common robotics tools

Undergraduate Teaching Assistant - Discrete Mathematics 08/2022 - 05/2023
University of Pittsburgh *Pittsburgh, PA*

- Supported students through weekly recitation, tutoring and office hours; managed grading and provided tutoring

Projects — Portfolio

ANA - Autonomous Navigation Assembly | github.com/Razzi86/ana_bot 08/2023 - present

- Created an autonomous robot car that uses robotics sensors to navigate; uses NVIDIA Jetson, ROS2, and LiDAR
- Researched and implemented optimized methods of perception, control, and navigation

MIT-PITT-RW Autonomous Racecar - Perception Team | driverless.mit.edu/mitpittrw 01/2024 - present

- Developed machine learning models for real-time vehicle and obstacle recognition using LiDAR and Cameras
- Implemented Computer Vision, Machine Learning, and Deep Learning methods with PyTorch and TensorFLow

Clothing Segmentation Extension | github.com/DW-Han/fashion-segmentation-rep 08/2023 - 09/2023

- Led the development of an AI-based Chrome extension for live clothing segmentation, achieving %86 accuracy
- 2nd place overall in the 2023 SteelHacks hackathon, winning the "User Experience" judging criteria

Box Game | github.com/Razzi86/Box_Game 08/2023 - 11/2023

- Engineered a two-player handheld game using Raspberry Pi and electrical engineering

Education

University of Pittsburgh 2024
Honors *- B.S. in Computer Science, Minor in Mathematics, GPA: 3.6*

Delaware County Community College 2021
Honors *- A.S. in Computer Science, GPA: 3.9*

Coursework: Deep Learning, Computer Vision, Data Structures & Algorithms, Operating Systems, AI, C++

Skills

Languages: C++, Python, MATLAB, Java, URDF, Blueprint, Javascript, CSS, HTML, C#, C,
Tools: Docker, Azure Devops, Git/GitHub, NVIDIA Jetson, Unreal Engine 5, Gazebo, ROS2
Technologies: PyTorch, TensorFlow, OpenCV, CUDA, Ubuntu, PyQt5, SLAM, Nav2, PCL, ICP, YOLO, CAD