

# Aidan Reilly

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## EXPERIENCE

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### Robotics Software Engineer Intern

*Komatsu Mining*

05/2024 - present

*Warrendale, PA*

- Developing autonomous vehicles for underground mining using ROS2 and Unreal Engine 5

### Robotics Software Engineer Intern

*Komatsu Mining*

05/2023 - 08/2023

*Warrendale, PA*

- Led the development of a fully autonomous mining vehicle from simulation to physical production, increasing operational efficiency by over 25% and driving \$1.1 billion in annual revenue
- Increased performance by 20x using CUDA, improving the quality of simulations and pointcloud processing
- Managed 10,000+ lines of code with Docker and Azure DevOps in a Linux environment
- Utilized the latest technologies of C++, Python, 3D Lidar, Radar, IMU, ROS2, SLAM, NAV2, ICP
- Presented progress to Vice Presidents, resulting in increased funding and project expansions

### Undergraduate Teaching Assistant - Discrete Mathematics

*University of Pittsburgh*

08/2022 - 05/2023

*Pittsburgh, PA*

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

## PROJECTS

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### ANA - Autonomous Navigation Assembly | [github.com/Razzi86/ana\\_bot](https://github.com/Razzi86/ana_bot)

08/2023 - present

- Engineered an autonomous robot car using C++, ROS2, SLAM, NAV2, Lidar, Depth, Arduino, Jetson
- Researched modern methods to maximize performance of perception, navigation, localization, and control

### MIT-PITT-RW Perception Team | [driverless.mit.edu/mitpitrw](https://driverless.mit.edu/mitpitrw)

01/2024 - present

- Contributed to an autonomous racecar by developing ML models for real-time vehicle and obstacle recognition
- Modified docker to work on ARM64 computer architecture, enabling development on the NVIDIA Jetson Orin
- Working towards research paper for Carnegie Melon University Robotics Institute

### Clothing Segmentation Extension | [github.com/DW-Han/fashion-segmentation-rep](https://github.com/DW-Han/fashion-segmentation-rep)

08/2023 - present

- Led the development of an AI-based Chrome extension for live clothing segmentation, achieving %86 accuracy
- Utilized Pytorch, TensorFlow for model, JavaScript, CSS, HTML for front and back end

### Box Game | [github.com/Razzi86/Box\\_Game](https://github.com/Razzi86/Box_Game)

08/2023 - present

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

## EDUCATION

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### University of Pittsburgh

*B.S. in Computer Science, Minor in Mathematics, **Honors**, GPA: 3.6*

05/2024

### Delaware County Community College

*A.S. in Computer Science, **Honors**, GPA: 3.9*

05/2021

**Coursework:** Deep Learning, Computer Vision, AI, Data Structures & Algorithms, C++, Python

## SKILLS

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**Languages:** C/C++, Python, MATLAB, Java, JavaScript, URDF, Blueprint

**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