

# Aidan Reilly

610-608-8166 | [arr160@pitt.edu](mailto:arr160@pitt.edu) | [Website](#) | [linkedin.com/in/aidan-r-reilly](https://linkedin.com/in/aidan-r-reilly) | [github.com/Razzi86](https://github.com/Razzi86)

## EXPERIENCE

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### Robotics Software Engineer Intern

05/2024 - present

*Komatsu Mining*

*Warrendale, PA*

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

### Robotics Software Engineer Intern

05/2023 - 08/2023

*Komatsu Mining*

*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 salt mining revenue
- Managed 10,000+ lines of code with **Docker** and **Azure DevOps** in a **Linux** environment
- Increased performance by 20x using CUDA, improving the quality of simulations and pointcloud processing
- 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

08/2022 - 05/2023

*University of Pittsburgh*

*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**
- Performs sensor fusion to achieve robust localization, control, and path planning

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

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

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

02/2022 - 04/2023

- 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)

05/2019 - 07/2019

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

## EDUCATION

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### University of Pittsburgh

05/ 2024

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

### Delaware County Community College

05/2021

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

**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