# Aidan Reilly

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## EXPERIENCE

**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 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

**ANA - Autonomous Navigation Assembly** | 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/mitpittrw  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  02/2022 - 04/2023
- Led the development of an AI-based Chrome extension for live clothing segmentation, achieving %86 accuracy
- Utilized Pytorch, TensorFow for model, JavaScript, CSS, HTML for front and back end

**Box Game** | github.com/Razzi86/Box_Game  05/2019 - 07/2019
- Engineered a two-player handheld game using Raspberry Pi and electrical engineering

## EDUCATION

**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 |