

# Sam Green

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## EDUCATION

### Carnegie Mellon University | Pittsburgh, PA

Masters of Science in Artificial Intelligence Engineering – Mechanical Engineering | Dec 2026  
Overall GPA 4.00/4.00

### Carnegie Mellon University | Pittsburgh, PA

Bachelor of Science in Mechanical Engineering | May 2025  
Additional Major in Biomedical Engineering  
Overall GPA 3.62/4.00 | University Honors

## RELEVANT EXPERIENCE

### Renewable Performance Intern, Exus Renewables | Pittsburgh, PA | June 2025 - July 2025

- Programmed a tool to detect anomalies in wind and solar sites, utilizing Python and Pandas to pull, process and send data to an SQL server. Used Ignition to automate it so it runs daily and provides a list of problematic metrics to site managers. Estimated by head of operations to save Exus 6.8 million dollars annually.

### Renewable Performance Intern, Exus Renewables | Pittsburgh, PA | June 2024 - July 2024

- Developed documentation and a working API for a new SCADA system for wind and solar plants.
- Programmed three separate programs in Python with Pandas to pull down data and present it to site managers in PowerBI.
- Utilized these to pinpoint any plants or devices performing poorly and identify potential causes and solutions.

## PROJECT EXPERIENCE

### NSL-KDD Cyber Attack Prediction | August 2025 - November 2025

- Created a pipeline to clean, scale and encode the NSL-KDD data for use in a pytorch neural network to identify cyber attacks.
- Trained a neural network using pytorch to predict the presence and type of attack, achieving an 89% accuracy on testing data.

### Motion Capture Experimentation | January 2025 - May 2025

- Calculated human kinematics and kinetics from two smartphone camera videos utilising a machine learning software.
- Compared these results to existing literature and studies to test its accuracy and viability.

### Smart Aid Smart Crash Cart | September 2024 - May 2025

- Designed and built a smart crash cart utilizing an arduino connected to a series of pressure plates and a touch screen tablet, specifically to aid doctors in cardiac events and aid inventory tracking.

### Senior Mechanic for APEX, | September 2021 - May 2025

- Constructed 3 carbon fibre gravity racers over 4 years, implementing different carbon fibre layup and infusion techniques.
- Machined, designed and constructed steering and braking systems for these racers.
- Taught and guided new members on construction process of these racers.

### Climate Change Mapping | January 2024 - April 2024

- Used numerical methods and data from weather stations in order to map how climate was changing globally. Performed a presentation on finished results to CMU professors.

### Additive Manufacturing Research | May 2023 - August 2023

- Researched how existing components for a gravity racer could be replicated, adapted, and optimized for 3D printing.
- Wrote a paper summarizing results and presented it to a professor and graduate students.

## LEADERSHIP EXPERIENCE

### Mechanical Safety and Construction Chair, Buggy, CMU |September 2025 - May 2026

- Implemented standardised safety systems across all teams, dramatically improving safety across sport.
- Created and delivered training material to train members of 11 different teams on how to safely perform hazardous procedures.
- Coordinated with university safety board to ensure safety of sport in years to come.
- Balanced needs of 11 different teams to ensure all got best possible outcomes.

### Apex Buggy, CMU | September 2022 - May 2025

- Led a team of 45 people in preparation for raceday as Push Captain, breaking 6 team records and getting a course record.
- Led an organization of 70 people for two years as Chairman, coordinating with university and chairmen of other teams.
- Won Chairman of the Year Award and Chairman's Choice Award in 2025.

## SKILLS

**Software:** Microsoft Office, MATLAB, Solidworks, Python, C, Power BI, Postgres, Pandas, Pytorch, Scikit-Learn, Tensorflow, Neo-4J, NoSQL

**Machines:** MIG and TIG Welder, Band Saw, Circular Saw, Table saw, Mill, Lathe, Drill Press, Waterjet cutter, Plasma cutter, 3D printer, Lasercutter, Soldering Iron

**Construction Processes:** Additive manufacturing, Carbon Fibre Layups, Carbon Fibre Infusion, Investment Casting, Sand Casting

**Languages:** Conversant in French.