

# Stellan Kalel Sarduy

Portfolio: <https://ssarduy.wixsite.com/stellan-sarduy>

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## EDUCATION

**Carnegie Mellon University**, Pittsburgh, PA  
Bachelor of Science in Mechanical Engineering

**December 2026**  
GPA : 3.51

**Relevant Coursework:** Theme Park Engineering, Heat Transfer, Rapid Prototype Design, Dynamics Systems & Control Electronics for Sensing & Actuation, Mechanics 2D & 3D Design, Thermodynamics, Space Robotics, Fluid Mechanics,

## SKILLS

**Softwares:** SolidWorks, Python, MatLab, Ansys, AutoCAD, MasterCAM, Microsoft (Excel, Word, etc), Arduino IDE  
**Machines:** CNC, Manual Mill, Laser Cutting, 3D Printers, Lathe, WoodWorking (Planing, Jointing, Sawing, hand tools)

## EXPERIENCE

**Amazon**, Miami FL  
Operations Engineer Intern

**Summer 2025**

- Created a dynamic **Excel** dashboard to track associate-level performance across 50+ users, driving a 6% increase in damaged package sellable yield through data-driven analysis & insights.
- Partnered with cross-functional teams to support strategic decision-making, enhancing operational efficiency and team performance through targeted coaching and training.

**PRISM & Moon Ranger**, CMU Space Robotics Lab  
Mechanical Designer

**Spring & Fall 2024**

- Designed a preliminary rover chassis for NASA's Moon Ranger, supporting a 1.5 kg instrument payload, using **SolidWorks** for CAD modeling & Pugh charts for subsystem requirements.
- Created preliminary verification plans, researching previous field testings to determine if low temperatures have adverse effects on the materials.
- Performed **Finite Element Analysis** to analyze selected materials for outer chassis, which achieved a factor of safety of 3.

**NASA L'SPACE**, Remote  
Hardware Mechanical & Analysis Engineer

**Summer 2024**

- Directed integration and management of vehicle hardware & subsystem components for a robotic system, ensuring alignment with project objectives & performance specifications.
- Designed and modeled chassis & thermal subsystems using **SolidWorks & NX**, conducting thermal analysis simulations in ANSYS to validate insulation, reflectors, and heaters performance.
- Selected materials & manufacturing processes for thermal control systems, optimizing for reliability & performance in extreme environments.

## HARDWARE PROJECTS

**Electric Kettle Tipper**

**Fall 2024**

- Designed an assistive tipping mechanism for cerebral palsy patients using **SolidWorks**, enabling kettle pouring without user force, with a focus on electro-mechanical integration.
- Conducted **Finite Element Analysis** to select insulated materials for handling boiling water, & fabricated prototypes using woodworking, laser cutting, & lathing, including gear train & motor mount assembly with integrated **Arduino**

**Arduino Differential Drive Robot**

**Spring 2024**

- Developed and built Arduino based control algorithm for differential drive using IR and ultrasonic sensors to follow curves
- Implemented mode switching & docking control, iterated through course testing to improve speed & effectiveness

**Acrylic & 3D Printed Bicycle Truss**

**Fall 2023**

- Designed an acrylic truss in **SolidWorks** to fail at a specific load and used a laser cutter to construct 5 iterations.
- Conducted analytical computations and compared with 5 iterations of test results documented in report [Team of 3]

## ACTIVITIES & POSITIONS

**American Society of Mechanical Engineers** (Design Officer)

**Fall 2022 - Present**

- Promote and help organize campus events (recruiting, professional development, social)

**Theme Park Engineering Group** (Executive Member)

**Fall 2025 - Present**

- Help plan & build for booth event, Design ride systems for future Thrill Design Competition

**Pittsburgh Pirates Ball Boy**

**Spring 2026 - Present**

- Game-day ball team responsibilities for home games, supporting game operations & fan-engagement