Reyan Aberra

520 N Mesa Dr. Apt 228
Mesa, AZ 85201-5965
reyanaberra@gmail.com
(480) 246-1090
Portfolio: https://reyanaberra.github.io/

EDUCATION

Arizona State University, Ira A Fulton Schools of Engineering **Tempe, AZ**
Bachelor of Science in Mechanical Engineering (Computational Mechanics) August 2022 - May 2026
GPA: 4.0 | **Class Standing:** Junior
Relevant Coursework: Computer-Aided Design, Programming Principles w/ MATLAB/Python/C++/Excel, Numerical Methods, Statics, Dynamics, Thermodynamics, Fluid Mechanics, Mechanics of Materials
Ongoing Coursework: Heat Transfer, Materials Science, Structural Mechanics, Experimental Statistics

EXPERIENCE

Intel Corporation **Chandler, AZ**
Process Engineer Intern January 2024 - August 2024
- Designed, 3D printed, and implemented protective mechanical guards and fixtures using SolidWorks to protect robot end effectors and replace vendor supplied parts, achieving a cost savings of over $10,000
- Conducted nonlinear dynamic analysis using SolidWorks Simulation to ascertain part durability under impact conditions, optimizing design for performance and safety
- Adjusted tool temperature and cycle time parameters using APC and monitored tool trends using SPC, ensuring tool readiness and product safety, as well as increasing yield and decreasing downtime
- Occasionally performed or supervised calibration of wafer transfer robots in the factory to reduce defects

ACTIVITIES

Sun Devil Robotics Club **Tempe, AZ**
Automated Card Folder Winter 2023 - Spring 2024
- Designed an automated card folder for KeHE Distributors as a member of the Sun Devil Robotics Club
- Drew initial prototype designs for various mechanical mechanisms to facilitate folding motion
- Designed a lead-screw linear actuator mechanism using Solidworks to allow for vertical motion of platform

University Rover Challenge Spring 2023 - Fall 2023
- Designed the mechanical body of a planetary rover as a member of the Sun Devil Robotics Club
- Designed and 3D printed lightweight and durable spoke wheels capable of traversing the Martian terrain
- Selected waterproof material for front panel housing the interior biological and electrical components and designed a connector for said panel using SolidWorks, ensuring functionality in harsh and wet environments

PROJECTS

Computer Cooling Case Summer 2024
- Designed and 3D printed a thermally efficient ABS protective case for a Raspberry Pi 5 using SolidWorks
- Performed a coupled fluid-thermal simulation in Ansys Fluent to optimize cooling and airflow after geometry cleaning and meshing, ensuring chip temperatures remained within safe limits
- Validated results through physical testing, predicting real-world thermal performance with 95% accuracy

Handheld Thermal Imager Summer 2023
- Designed and programmed a thermal imager with an ESP32 microcontroller and an IR thermal camera
- Designed and 3D printed an ergonomic enclosure using Fusion 360 to allow for portable handheld usage
- Designed the circuitry and manually wired all electromechanical components
- Programmed three different mechanical input devices and two new color palettes using C++ and the Arduino IDE and MATLAB libraries for enhanced data visualization

CREDENTIALS

Awards: National Recognition Scholar, Dean's List, AP Capstone Diploma, AP Scholar with Distinction
Certifications: Certified SolidWorks Associate, OSHA General Industry Safety & Health (Healthcare)
Design & Analysis: SolidWorks, SolidWorks Simulation, ANSYS Fluent, Fusion 360, AutoCAD, 3D Printing
Programming & Electronics: Python, C++, MATLAB, Arduino, LTSpice, Soldering, Breadboarding