

Om Bamane

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Education

Mechanical Engineering, BSE

Arizona State University, Tempe, AZ GPA [3.82/ 4.00]

Graduation Date: Fall 2025

Work Experience

Metrology Automation Intern, Fluke Corporation

May 2024-August 2024

- Automated the calibration process of the Ruska 2456 Laboratory environment monitor using Python and reduced process lead time by 62.5%
- Utilized Python Serial communication library “Ser” to communicate with pressure, temperature, and humidity standards and eliminated manual operation entirely.
- Utilized Python “Pandas” library to do time series analysis on the data collected by the automation routine.
- Developed and designed an elementary GUI to set COM ports and visualize results.

Research Assistant, Robotics and Intelligent Systems (RISE) Laboratory

March 2023-April 2024

- Assisting Ph.D. candidates in researching the modeling and control of pneumatically driven soft robotic arms.
- Using ROS and Python to write nodes and create a Pub Sub system between all low-level hardware.
- Utilized the Physical reservoir computing algorithm to train the soft robotic arm.
- Collecting, analyzing, and compiling data using MATLAB and studying the relationship between pressure, loaded weight, and bending force.
- Designing and 3d printed 2 types of mounts for both central and offset loading.

Executive Learning Assistant, Fulton Schools of Engineering

August 2023-Present

- Tutored 500+ students through 1-on-1 tutoring sessions and answered over 1000 questions.
- Supporting 13 engineering courses, including Statics, Structural Mechanics, Mechanics of Materials System Dynamics and Controls, Newtonian Mechanics, Differential equations, Linear Algebra,
- Assisting students in utilizing software such as SolidWorks and MATLAB for engineering coursework.
- Voted Tutor of the Month twice.
- Aided in hiring new tutors by interviewing candidates and hosted content trainings to train new hires.

Leadership and Projects

Chief Engineer, Sun Devil Robotics Club (SDRC), ASU

July 2023-Present

- Building a Mars rover to compete in the University Rover Challenge (URC).
- Overseeing the software infrastructure and the mechanical design of the rover and optimizing it for Competition
- Manage and lead all 5 sub-teams with over 50 members.
- Programming a differential drive train with 6 brushless hub motors using ROS 2 control, C++, and a custom-designed motor controller.
- Utilizing MATLAB Simulink to design a PID controller for the rover's autonomous navigation.
- Utilizing ROS and 2 stereo vision cameras to do object detection for the autonomous functioning of the rover.
- Using SolidWorks to create URDF meshes to simulate rovers in a virtual environment.

Technical Team Member: Mechanical and Arm Team (SDRC)

January 2022-June 2023

- Wrote an algorithm using ROS and Python to extract data from LiDAR sensors and use it to create a point cloud for terrain mapping for the rover to traverse autonomously.
- Designed a 5 DOF arm using SolidWorks after researching the types of gripper and joint mechanisms, applying DFM concepts and principles of System Dynamics and controls.

Engineering Projects, Fulton schools of engineering, ASU

August 2022-December 2022

- Led a team of 4 people to assemble a full V12 engine using SolidWorks and carried out a motion analysis.

Skills

Technical: Python | C++ | Linux | MATLAB | SolidWorks | ROS | Simulink | Arduino/Raspberry Pi

Laboratory: Laser Cutting | 3d printing | Soldering | Woodworking

Relevant Courses

Structural Mechanics | System Dynamics and Controls | Fluid Mechanics | Project Management | Circuits | Heat Transfer