OM GAIKWAD

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EDUCATION

Stevens Institute of Technology | Hoboken, NJ
Master of Engineering - Applied Artificial Intelligence, Computer Eng Concentration — Expected Dec 2025
Bachelor of Engineering - Mechanical Engineering, Robotics Concentration — Expected May 2025
Coursework: *Field Sustainable Systems with Sensors (LiDAR, Thermistor, Barometric Pressure), Circuits and Systems, Thermal Engineering, Fluid Mechanics, Heat Transfer, Autonomous Robotics, Python Programming*

WORK EXPERIENCE

SIT Prototype Object Fabrication (ProOF) lab, Robotics Engineer Intern | Hoboken, NJ — May 2024 - Present

- Developed isoparametric mapping algorithm of the robot workspace using **OpenCV** and **ComputerVision**
- Programmed a Path Planning Algorithm for Automatic Fiber Placement on a 2D surface using **Python**
- Developing a virtual testing environment for **DOOSAN H2515** collaborative robot using **MATLAB** and **ROS 2** resulting in more time effective lab operations

Charter Machine Company, Mechanical Engineer Intern | Metuchen, NJ — Jan 2023 - Jul 2023

- Designed brackets, support frames, and pneumatic components in **Autodesk Inventor** and performed **FEA**, and produced fabrication drawings aligning to **DFMA** principles
- Optimized the **hydraulic system** to facilitate flow control and pressure control simultaneously, reducing the manufacturing cost by **15%** per project
- Produced over **200 assembly drawings** of the belt press machines with appropriate **GD&T** and **co-authored Operation Manuals** with Senior Engineers
- Conducted **field visits** to the assembly facility to assist with **fabrication operations**

Spartificial, AI Intern | Hoboken, NJ (Remote) — Jun 2022 - Aug 2022

- Developed detailed analysis on the image datasets of the surface of the moon with an objective to categorize safe landing surfaces for spacecrafts by performing **image processing using TensorFlow and OpenCV with Python**
- **Led a team of 6 students** to develop, test and validate the algorithm; delegated team operations
- Presented the final project to a panel of astrophysicists and achieved **93% accuracy rating**

ENGINEERING PROJECTS

Soft Exosuit for Spinal Muscular Atrophy (SESMA 3.0), ME Capstone — Jul 2024 - Present

- Develop control algorithms in **C/C++** on **Seeeduino 4.3** that interpret sensor data and dynamically adjust motor assistance during the sit-to-stand motion
- Develop algorithms to integrate **sensors (force-sensing resistors, accelerometer, rotary encoder)** for real-time monitoring of the user's position, optimizing motor control and power usage

Stevens Ankle-Foot Electromechanical (SAFE) orthosis, ProOF Lab Assistant — May 2024 - Present

- Developed and refined 3D CAD models for functional prototype iterations in **Artec 3D software**, actively managing prototype-to-production processes to ensure timely delivery
- Handle manufacturing and assembly of **PLA-CF** prototypes of powered ankle-foot orthoses (AFO) controller
- Assist with **torque and failure testing**, generate **structural analysis** and study the prototype to facilitate further improvements in product durability

SKILLS

Mechanical: AutoCAD, SolidWorks, ANSYS, Creo, LabVIEW, 3D Printing, DFMA, GD&T, Artec 3D, Six Sigma
Programming: Arduino, C++, Python, MATLAB, ROS, Open3D

LEADERSHIP

Chi Phi Fraternity (President), Society of Physics Students (Secretary)