

OM GAIKWAD

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EDUCATION

Stevens Institute of Technology | Hoboken, NJ

Master of Engineering - Electrical Engineering, Artificial Intelligence Concentration

Expected Dec 2025

Bachelor of Engineering - Mechanical Engineering, Robotics Concentration

Expected May 2025

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

SKILLS

Mechanical: AutoCAD, SolidWorks, ANSYS, Creo, LabVIEW, 3D Printing, DFMA, GD&T, Product Design, Lean Six Sigma

Electrical: Embedded systems, PCB design, PWM control, CompactLogix PLC

Programming: Python, C, C++, MATLAB, Javascript, ROS, ML

WORK EXPERIENCE

Charter Machine Company, Hardware Engineer Intern | Metuchen, NJ

Jan 2025 - Present

- Lead author of **Submittals and Operation Manuals**; create and update SOPs, instruction manuals and instruction sheets for Belt Press and Tower Press Machines
- Assisting with **mechanical and electrical drawings**, ensuring compliance with **GD&T** and **IEC 62061:2021** principles

SIT Prototype Object Fabrication (ProOF) Lab, Robotics Engineer Intern | Hoboken, NJ

May 2024 - Dec 2024

- Built a **MATLAB** and **ROS 2** integrated virtual testing environment for **DOOSAN H2515** collaborative robot that enabled pre-deployment testing and accelerated lab operations
- Programmed a Path Planning Algorithm for Automated Fiber Placement (AFP) using **Python**
- Designed an AFP compaction roller end-effector in **SolidWorks**, equipped with **pneumatic force/tow tension control**

Charter Machine Company, Hardware Engineer Intern | Metuchen, NJ

Jan 2023 - Jul 2023

- Designed brackets, support frames, pneumatic components in **Autodesk Inventor**, performed **FEA**, and produced **100+ fabrication drawings** to meet **ASME Y14.5 GD&T Standards**
- Reconstructed **hydraulic manifold routing** for better flow control; designed the model in Inventor with at most precision ready for manufacturing
- Produced **15+ engineering deliverables** with appropriate **DFMA** principles; worked with Senior Engineers to **co-author Operation Manuals**

Spartificial, ML Research Intern | Hoboken, NJ (Remote)

Jun 2022 - Aug 2022

- Conducted a detailed analysis of lunar topography datasets to classify safe landing sites for spacecraft using image processing techniques with **TensorFlow** and **OpenCV**
- Independently built **R-CNN** based algorithm and analyzed **20+** lunar crater image datasets with **97.6% accuracy**

ENGINEERING PROJECTS

Soft Exosuit for Spinal Muscular Atrophy (SESMA 3.0), Mechatronics Lead

Jul 2024 - Present

- Integrated **IMU sensors and force-sensing resistors** into a custom PCB for real-time biofeedback in assistive robotics; facilitated with the vector calculations of the recorded data in **MATLAB**
- Developed and implemented **control theory algorithms** in **C++** to optimize **IMU filtering**, reducing CPU load by 20x and increasing accuracy, achieving a **20% faster** motor control response time

Stevens Ankle-Foot Electromechanical (SAFE) Orthosis, Prototyping Team

May 2024 - Dec 2024

- Engineered **5 3D-printed PLA-CF** prototypes for a powered ankle-foot orthosis
- Assisted with **failure mode analysis** of the prototype and implemented design refinements, achieving a **15% reduction** in the structural weight while maintaining integrity and performance

Modeling Vehicle Dynamics using MATLAB, Personal Project

Aug 2023 - Oct 2023

- Modeled vehicle dynamics and developed both nonlinear and linear state-space representations using **Euler-Lagrange equation** to simulate its lateral and longitudinal dynamics in **MATLAB**
- Incorporated elements such as tire forces, propulsion, braking, and steering angle inputs into the **control system design** using **Simulink** that enabled real-time vehicle simulations