

# Nikhil Garg

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## EDUCATION

### Georgia Institute of Technology

Expected Graduation: **May 2027**

#### B.S. Mechanical Engineering | Dean's List

Coursework Completed: Mechanics of Materials, Statics, Materials Science, Differential Equations

## SKILLS

**CAD/Analysis:** SolidWorks, Ansys Mechanical, CATIA, Finite Element Analysis, Computational Fluid Dynamics, GD&T

**Manufacturing:** Fixture Design, Process Optimization, DFM, Root Cause Analysis, FMEA

**Prototyping:** 3D Printing, Laser Cutter, Waterjet, CNC Machining, Lathe, Wind Tunnel Testing, Wood & Metal Shop

**Programming & Tools:** MATLAB, Python, C++, Raspberry Pi, ROS, Arduino IDE, LabVIEW, MS Office, Google Suite

## EXPERIENCE

### The Coca-Cola Company | Equipment R&D Intern | Atlanta, GA

Aug 2025 - Present

- Led full lifecycle validation of a production-unit beverage dispenser, coordinating setup, test execution, and serviceability review that uncovered **3 key design inefficiencies**, saving **\$25K in rework** and assembly costs across pilot units
- Designed and implemented solubility, material compatibility, and long-term dispensability tests for new syrup formulations, enabling data-driven material selection and preventing early component failures observed during endurance trials
- Developed custom test fixtures and flow instrumentation setups in SolidWorks to measure carbonation stability, pressure drop, and valve performance, **resulting in 15% higher measurement repeatability** and streamlined test documentation
- Automated data acquisition and analysis using LabVIEW and Excel macros, **reducing manual test logging time by 40+ hours per month** and improving traceability across multiple product configurations
- Collaborated cross-functionally with Product Development, Reliability, and Manufacturing teams to translate test results into engineering change proposals using DFMEA and root cause analysis, influencing design updates for the next-generation dispenser platform

### Georgia Tech Manufacturing Institute | Undergraduate Research Assistant | Atlanta, GA

May 2025 - Present

- Developed a test bench to accelerate aging of ADAS sensors in a controlled 20-60°C, 30-90% RH, and 10-50 Hz vibration environment to support machine learning-based lifetime prediction
- Used SolidWorks to **model 12+ custom sensor mounts**, fabricated fixtures using OMAX waterjet and 3D printing, and programmed a Raspberry Pi with ROS to **collect and process data from 4-6 sensors in real time**
- Improved vibration isolation from **20% to 91.7%** at 30-40 Hz range through ANSYS FEA analysis and physical testing, and **confirmed test repeatability across 15+ trials**, enabling consistent sensor degradation patterns for algorithm training

### HyTech Racing | Aerodynamics Engineer | Atlanta, GA

Aug 2024 - May 2025

- Simulated yaw-angle airflow in CATIA across **200+** cases to validate cornering performance, **reducing drag coefficient discrepancies by 12%** and **aligning CFD results within ±5% of on-track data**
- Processed simulation outputs in MATLAB to optimize lateral stability metrics, leading to design adjustments that improved cornering grip and **reduced oversteer at speeds above 30 mph**
- Led trackside testing sessions integrating sensor data (pitot tubes, pressure taps) with CFD findings, **cutting test time by 30%** and contributing to iterative design changes that improved lap consistency

## PROJECTS

### Autonomous Delivery Drones - Hardware/Software Integration Lead

Aug 2023 - Dec 2023

- Developed a lightweight autonomous drone system with PX4 Autopilot and QGroundControl, **reducing frame weight by 12%**, enabling a **2 kg payload**, and **improving delivery efficiency by 18%** through hardware-software integration and flight data validation
- Led structural modeling and frame design in Fusion 360 to **improve durability under 2.5x takeoff thrust loads** and ensure safe operation across **10+ autonomous flight tests**