# Rajarshi Das

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## EDUCATION

**Cornell University -** Sibley School of Mechanical and Aerospace Engineering **Ithaca, NY**
*Bachelor of Science in Mechanical Engineering* Expected May 2026

## PROJECTS

**Robotics Lead @ Cornell Autoboat** **Website | Ithaca, NY**
R&D | Sensor Calibration | Machining Feb 2023 - *Present*

- Led a cross-functional subteam of 5 (soon expanding to 8–9) to develop a 1:4 subscale robotic arm, defining subsystem test protocols, validation gates, and acceptance criteria for encoders, motors, limit switches, and arm design prior to scaling
- Scoped the encoder calibration effort by setting rig requirements, Python logging standards, and error analysis methods to calibrate an in-house magnetic rotary encoder
- Unified the team's documentation by launching a branded guide format with consistent logos, fonts, and layouts; standardized installation/testing procedures and onboarding resources to improve reproducibility
- Directed the team-wide transition to SolidWorks, developing installation instructions, training materials, and best-practice templates to unify design workflows
- Supervised parallel subsystems (skeeball shooter, watergun), delegating tasks, setting weekly targets, and reviewing integration progress
- Redesigned the electronics bay with modularity, waterproofing, and isolated systems to improve durability and maintenance; reduced wiring complexity by creating a streamlined layout

## WORK EXPERIENCE

**R&D Engineering Intern @ Dominion Engineering Inc.** **Reston, VA**
Vibration Analysis & Visualization | Robotic Arm | NU-DEC | MATLAB | Python June 2025 - August 2025

- Conducted experimental evaluation of Dominion's NU-DEC ultrasonic cleaning system, using a Universal Robotics arm and vibrometer to measure vibration response under varying clamp setups and operating conditions
- Evaluated clamp placement/material strategies using high-density vibration scans to locate standing waves and optimize suppression
- Performed transducer thermal endurance testing, demonstrating safe operation up to 44 min vs. 5 min expected, by monitoring friction points and temperature rise
- Developed MATLAB and Python pipelines to convert proprietary vibrometer data formats (.o9p), process vibration signals (FFT, waveforms, heatmaps, 3D visualizations), and fully automate reporting
- Authored a 40-page technical manual detailing test workflows, calibration methods, error analysis, and post-processing code; presented findings to supervisors to ensure efficient knowledge transfer
- Collaborated with lab managers, machinists, and engineers across disciplines, while adhering to torque specs and test logging

**Founder & Manufacturing Lead @ Meshminds → Glassloom** **Website | Munich, Germany & Westbury, NY**
FDM 3D Printing | Workflow Automation | Python | Fusion 360 June 2023 - *Present*

- Managed an international supplier network across 5+ regions (Australia, Canada, California, Germany, UK), ensuring on-time fulfillment and rigorous quality control in distributed manufacturing
- Designed personalized 3D-printed products in Fusion 360, translating client specifications into production-ready files while streamlining workflows to cut manual processing by 25%
- Automated address processing, cutting order handling time by 95% during peak holiday seasons by developing Python-based CSV scripts for our shipping manager (Rollo)
- Developed a Python-based file conversion app, cut data preparation time by 70% and enhance user privacy in 3D-print workflows
- Achieved 2,500+ unit sales with a sustained 4.9-star customer rating

## SKILLS

**Test & Measurement:** Sensor calibration, vibration analysis, error/tolerance analysis
**Data & Programming:** Python (NumPy, pandas, automation, signal processing), MATLAB (FFT, visualization), Javascript
**Manufacturing & Modeling:** FDM 3D printing, Composites, Machining (Milling & Lathing), SolidWorks, Fusion 360, Inventor
**Project Management:** Workflow automation, design optimization, documentation, team coordination