Javier Majumdar

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EDUCATION

Cornell University Ithaca, NY
Bachelor of Science in Mechanical Engineering: GPA: 3.45 *Aug. 2023 – May 2027 (expected)*

Relevant Coursework: System Dynamics, Thermodynamics, Fluid Mechanics, Dynamics, Statics & Mechanics of Solids, Intro to Mechanical Design, Linear Algebra, Differential Equations

PROFESSIONAL EXPERIENCE

Mechanical Engineering R&D Intern May 2025 – Aug 2025
Titan Tether Technologies *Remote*

- Designed and simulated rate-activated tether (RAT) components in SolidWorks and ANSYS Mechanical, conducting FEA and material testing to optimize tensile performance and guide manufacturable CAD redesigns.
- Simulated and optimized rate-activated tether materials in Python to evaluate force–displacement behavior under variable strain rates, using results to inform design iterations and prototype testing.
- Presented findings to Army Research Lab, demonstrating clear data analysis, visualization, and effective technical communication of complex datasets.

Machine Learning Engineering Intern May 2025 – Aug 2025
Anote *Remote*

- Engineered and optimized a Python-based automation pipeline for SBIR grant proposals, reducing LLM token usage by 80% and cutting generation cost per proposal from $1.60 to $0.33 through efficient data handling and scripting, enabling scalable operations for large-scale document generation.
- Developed automated tools to generate compliant Word/PDF documents with structured technical sections for DoD submissions.
- Collaborated with engineers and leadership to integrate these systems across proposal workflows, improving turnaround and consistency.

RESEARCH EXPERIENCE

Undergraduate Researcher Sep 2025 – Present
Cornell University – Space Optical Imaging Systems (SIOS) Lab *Ithaca, NY*

- Developing an SQL integrated Python pipeline for the NASA Nancy Grace Roman Coronagraph Instrument database to compute and populate missing stellar angular diameters from planetary mission data, supporting optical system calibration and imaging-mission analysis.

Undergraduate Researcher Feb 2025 – May 2025
Cornell University – Happi Lab *Ithaca, NY*

- Designed and assembled a custom mechanical extruder in Fusion 360 using 3D printing and rapid prototyping for a drug-releasing fabric insulin delivery system.
- Conducted tolerance analysis and precision fits for sliding components, ensuring structural integrity and minimizing material deformation.
- Integrated motor drivers and feedback sensors to achieve stable extrusion rates, combining mechanical, electrical, and control-system design.
- Collected and analyzed experimental data to refine design parameters and improve manufacturability; presented findings in technical design reviews.

TECHNICAL SKILLS

Technical Skills: CAD, SolidWorks, Autodesk Fusion 360, FEA, ANSYS Mechanical, MATLAB, Simulink, Python, SQL, Excel, Word, Powerpoint, 3D Printing, Rapid Prototyping, Mechanical Systems Design, Tolerance Analysis, Data Analysis & Visualization, System Optimization, Machine Learning