JOSEPH MOSKOVITZ

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PERSONAL STATEMENT

Aerospace Engineering BS/MS candidate specializing in electric propulsion and nuclear technology, with a strong foundation in M&A finance and space policy. Experienced in international and collaborative academic research, having characterized Hall-effect thrusters and developed machine learning optimization models across multiple international teams. Passionate about driving the long-term technological development and commercialization of nuclear power within the space domain.

EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY — Atlanta, GA

Master's in Science in Aerospace Engineering — Jan 2026 - May 2027

Cumulative GPA: 4.0/4.0

Specialized Coursework: Finite Element Analysis, Scientific Machine Learning

Bachelor's in Science in Aerospace Engineering — Aug 2022 - May 2026

Minor in Nuclear & Radiological Engineering

Cumulative GPA: 4.0/4.0 | Dean's List 2022-2025

Specialized Coursework: Reactor Physics, Plasma Physics & Fusion Engineering, Radiation Protection Engineering, Space Policy

RANSOM EVERGLADES SCHOOL — Miami, FL

High School Diploma — Aug 2018 - May 2022

Cumulative GPA: 4.0/4.0 | Cum Laude

RESEARCH EXPERIENCE

HIGH-POWER ELECTRIC PROPULSION LAB - GEORGIA TECH — Atlanta, GA

Undergraduate Research Assistant — Jan 2024 – May 2026

- **Machine Learning (ML) to Predict and Optimize Low-Power HET Performance Operating on Multiple Propellants**
  - Collaborating with an international team (US, Israel, India) to build PCARE (Physics-Constrained Adaptive Residual Ensemble), an ensemble ML model predicting output parameters from raw data inputs and nonlinear features.
  - Performing multivariate optimization to maximize thrust to power (T/P) across multiple propellants (Xe, Kr, Ar, CO_2, N_2).
  - Co-authoring a manuscript on ML model development and inferencing for thruster optimization, targeting publication in the Journal of Electric Propulsion.
- **Comprehensive Survey of Electric Propulsion (EP) Missions [2017-2025]**
  - Developed python-based web scrapers and automation scripts to extract and aggregate comprehensive mission data from ESA's DISCOS and Space-Track.org databases.
  - Analyzing orbital data to evaluate and quantify industry-wide adoption trends of EP technologies over the past decade.
  - Will be drafting a comprehensive review manuscript targeting publication in Acta Astronautica to serve as a chronological successor to previous 2017 industry survey to evaluate changes in the field over the past decade.
- **Retarding Potential Analyzer (RPA) Redesign**
  - Redesigned the lab's proprietary RPA housing, grids, and wiring to more accurately analyze different plasmas and prevent shorting of different potential grids on older models.
  - Rebuilt CAD assemblies in SolidWorks, generating part drawings and GD&T with rigorous Design for Manufacturing (DFM) considerations for small, fragile components.
  - Created a BOM for the RPA, talked with various manufacturers and received quotes for different parts, machined parts in-house and ordered parts externally via lab management & procurement platform, and finally assembled 6+ fully functional units with interchangeable & spare parts.

EQUIPO DE PROPULSIÓN ESPACIAL Y PLASMAS - UC3M — Madrid, ES

Undergraduate Research Assistant — Sep 2024 – Dec 2024

- Developed a centralized machine/computer controls interface with LabVIEW for all power supply units (PSUs) involved in operating a HET.

ELECTRIC PROPULSION LABORATORY - TECHNION — Haifa, IL

Undergraduate Researcher — Jun 2024 – Aug 2024

- Characterized the performance and efficiency of the Simplified CAMILA low-power Hall-Effect Thruster (HET) across a diverse set of monatomic and molecular propellants (Xe, Kr, Ar, CO_2, N_2).
- Evaluated the viability of alternative propellants to mitigate industry reliance on Xe.
- *Note: Findings published at IEPC 2025 and revised manuscript accepted at the Journal of Electric Propulsion.*

WORK EXPERIENCE

REALTA FUSION Madison, WI
Fusion Intern May 2026 – Aug 2026
- Built python pipelines to analyze neutral beam injection (NBI) existing diagnostic data to better quantify beam characteristics.
- Designed and coordinated an experimental campaign with results to be presented at a plasma physics conference later this year.

ALLEN & COMPANY New York City, NY
Investment Banking Summer Analyst Jun 2025 – Jul 2025
- Executed live deals alongside senior bankers across the Biopharma, SaaS, and sports industrial verticals.
- Leveraged comprehensive valuation techniques (DCF, comps, precedents), M&A analysis (accretion/dilution), and rigorous equities research to support transaction advisory.

GEORGIA TECH COLLEGE OF ENGINEERING Atlanta, GA
Deformable Bodies Teaching Assistant Jan 2024 – May 2024
- Developed homework problems, facilitated office hours, and graded homework and exams for GT COE 3001, ensuring comprehension of complex engineering mechanics.

PUBLICATIONS

J. Moskovitz, W. Brabston, D. Lev, M. L. R. Walker, M. Rubanovych, and V. Balabanov. "Performance Comparison and Analysis of Low Power Hall Thruster Operation on Inert and Molecular Propellants." *39th International Electric Propulsion Conference*, September 14-19 2025, London, UK. (IEPC-559)

PROJECTS

SCRAP-SAT Atlanta, GA
Magnetics Engineer & Finance Lead Jan 2026-current
- Developing an integrated satellite to detumble and deorbit uncooperative space debris in Low-Earth Orbit (LEO) using magnetic eddy braking and a GOLD passive drag package.
- Developed a Python-based design tool using the magpylib library to optimize High-Temperature Superconductor (YBCO) pancake coils; performed multi-variable parameter sweeps (radius, turns, stacking) to maximize magnetic field strength while adhering to geometric constraints.
- Engineered a MATLAB simulation to model magnetic eddy current detumbling of non-cooperative space debris; implemented a Monte Carlo sweep to quantify rotational energy dissipation (kJ) and mission duration (s) across a broad trade space of debris moments of inertia, material properties, and rotational speeds.
- Building multi-year pro forma financial models (income and cash flow statements) to evaluate market scalability and venture viability, while concurrently authoring an investor pitch for a potential startup spinout.

1-D REACTION WHEEL Atlanta, GA
Project Lead Jan 2026-current
- Directing the design and construction of a reaction/momentum wheel to demonstrate spacecraft attitude control systems.
- Manufacturing the base, demo satellite body, and wheel via 3D printing while sourcing commercial-off-the-shelf electronic and mechanical components.
- Modeling open and closed-loop system behavior in Simulink and designing a PID controller for precision attitude control.
- Constructing circuits to power the stepper motor, Arduino controller, and IMU locally on the satellite disk.

COMMUNITY LEADERSHIP

CHABAD ON CAMPUS Atlanta, GA
Executive Board Member Jan 2024 – current
- Plan holidays, parties, social events, and more for the Jewish community at Georgia Tech.
- Increased the number of events for each Jewish holiday and helped increase weekly Shabbat attendance by over 50% in 3 years.

ZETA CHAPTER OF ALPHA EPSILON PI Atlanta, GA
Exchequer Apr 2023 – Apr 2025
- Managed the finances of the fraternity, including collecting dues, filing taxes, paying bills, and setting the budget.
- Incorporated the Chapter as a 501(c)(7) nonprofit organization, acquired a corporate line of credit, implemented modern expense-tracking software, and authored the organization's official Expense Policy and had it passed into the bylaws.

ADDITIONAL

Technical Skills: SolidWorks, Python, MATLAB, Simulink, LabVIEW, Finite Element Method Magnetics (FEMM), Data Analysis, Machine Learning, Excel, Woodworking, 3D Printing, Circuit design & construction
Languages: Bilingual in English & Spanish, Conversational in Hebrew