

Will Driessen

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Portfolio: <https://will-driessen.github.io>



EDUCATION

- **Georgia Institute of Technology** Atlanta, GA
M.S. - *Aerospace Engineering*; **GPA: 4.0** August 2023 - Present
Courses: Orbital Mechanics, Optical Navigation, Optimization, Kalman Filtering, Research.
- **University of Wisconsin - Madison** Madison, WI
B.S. - *Engineering Mechanics and Aerospace Engineering*; **GPA: 3.81** August 2019 - May 2023
Courses: Satellite Dynamics, Flight Dynamics & Control, Vector & Complex Calculus, Feedback Controls.

EXPERIENCE

- **Graduate Research Assistant - Advisor: Dr. John Christian** Atlanta, GA
Space Exploration Analysis Laboratory & Space Systems Design Laboratory August 2023 - Present
 - **NASA Optical Navigation SBIR:** Implemented pose estimation computer vision algorithms with Random Sample Consensus (RANSAC) to compare to statistically optimized models for an active NASA mission's navigation system.
- **Aerospace Engineering Co-op** San Diego, CA - Washington D.C.
ATA Engineering Inc. 1 year total: May 2021 - August 2023
 - **Onsite Modal Testing:** Performed modal testing on a military aircraft to survey global and local structural modes to prevent catastrophic failure at critical flutter speeds. Generated pre/post-test reviews and documentation.
 - **Space Station Habitat Structural Design:** Designed, through heavy iteration, structural fixtures for a space station planning a launch within two years. Optimized flexures, bolted joints, also orthogrid and isogrid sandwich panels. Respected factors of safety on stress, fatigue, natural frequency, and mass for launch environments.
 - **Mechanical Design and Drawing:** Using GD&T and company best practices, developed many parts, assemblies, and drawings using SolidWorks. Focused on parametric modeling using equations and configurations.
 - **Software Development:** Developed Python software to optimize machine learning algorithms to improve characterization of spacecraft re-entry materials. Increased prediction capability to 99% accuracy for algorithms through hyper-parameter optimization. Edited GUIs and was mentored by experienced developers.
- **Instrumentation Engineer (Student)** Madison, WI
Chemistry Instrument Research Shop - Mentor: Blaise Thompson Ph.D. May 2022 - May 2023
 - **Milspec Mass Spectrometer Control Box for NSF C-130 Flight Project:** Designed, built, and tested a rack mount control box for mass flow meters, mass flow controllers, and solenoids. Included RS485, I2C, and Ethernet protocols. Housed a kill switch for the entire instrument. Box to fly on an MC-130 for the NSF Earth Observing Laboratory to perform atmosphere experiments over NYC.
 - **High Flow Reactor Build and Automation:** Programmed background applications (daemons) on Windows to allow for open-source computer control of mass flow controllers, valves, and solenoids. Installed and successfully tested hardware/software in the lab. Saved lab thousand by not buying proprietary LabView add-ons.
 - **Rapid Prototyping and Instrument Repair:** Designed, built, tested, and repaired high-priority and short lead-time products for customers involved in research. *Examples Include:* Temperature Controllers, Photo-reactors, WiFi Sensing Boards, Cable Adapters, Motor Assemblies (Stepper, Servo, and Brushed/Brushless DC).

SKILLS

- **Design and Analysis:** SolidWorks, Siemens NX & PLM, ANSYS, FEMAP, Simulink, KiCAD, & Cura
- **Programming:** Python (ML/OOP), MatLab, Simulink, Git/GitHub, Arduino/C++, Mathematica, Raspberry Pi, & Maple
- **Manufacturing:** ASME Y14.5 GD&T, 3D Printing, Laser Cutting, Micro-Soldering, and Electronic Harnessing, Assembly, & Packaging. Machine Shop tools (Mills, lathes, saws, grinders, etc.).
- **Other:** Onsite test experience, NASA Design Standards, and SBIR/STTR Contract Work

HONORS, AWARDS, & CERTIFICATIONS

- University of Wisconsin - Madison Dean's Honor List (All Terms)
- CSWA - Certified SolidWorks Associate
- PADI SCUBA - Open Water Diver