

BAROCK ASSEGID

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EDUCATION

Florida State University – Tallahassee, FL

08/2023 – 05/2027

B.S. Mechanical Engineering, Minor in Philosophy of Law

- GPA 3.71/4.00 | Presidents' List

Relevant Coursework in Progress:

- Intro to Aerodynamics, Mechanical Engineering Tools, System Dynamics, Astrophysics, Heat Transfer, Programming: C/C++

PROJECT EXPERIENCE

Experimental Aerodynamics Research – Tallahassee, FL

08/2024 – 05/2026

Florida Center for Advanced Aero-Propulsion (FCAAP)

- Conducting hypersonic boundary layer research, analyzing laminar-turbulent transition in the PolySonic Wind Tunnel.
- Designed and manufactured a 7° half-angle cone model in SolidWorks with modular tips and embedded sensor mounts, enabling flexible testing. Met with tunnel engineers to perform force balance testing.
- Wrote Python code using Fourier transform techniques for high-frequency flow signal processing.
- Collaborating with the research team to integrate and optimize FLDI diagnostic systems and computational analysis.

Stirling Engine Design – Tallahassee, FL

06/2024 – 09/2024

Florida State University, Mechanical Engineering Tools Lab

- Designed and assembled a 36-part Stirling Engine in SolidWorks, applying GD&T, tolerance analysis, and material selection for high-temperature components.
- Manufactured custom parts through CNC machining and manual milling, including screws, gudgeon blocks, and flywheel.

Tabletop Electronic Composter (Mechatronics Project) – Tallahassee, FL

01/2024 – 04/2024

Florida State University, Mechatronics Lab

- Engineered a compact composter integrating 2 actuators, 3 sensors, and an LCD interface, controlled by an Arduino microcontroller programmed in C.
- Designed enclosure and moving parts in SolidWorks, applying tolerance stack-up analysis to ensure proper fits.
- Fabricated prototype using 3D printing and soldered circuitry, validating performance through sensor-driven feedback.

RELEVANT WORK EXPERIENCE

The Boeing Company – Everett, WA

05/2026 – Present

Flight Controls, Primary Flight Function Intern

- Produced DTP's for Signal Selection and Fault Detection (SSFD) logic, gaining 100% coverage on 14 model-based requirements, clearing dependencies for airplane development certification. Completed end to end Pitch Control MCA for stabilizer position and column cutout functions.
- Produced Agentic "wiki assistant" tool to streamline the onboarding process for matlab toolbox and aid in navigating the Wiki for current team members, reducing average time to find a resource by 80%.

National Aeronautics and Space Administration (NASA) – Remote

08/2025 – 12/2025

L'SPACE MCA, Electrical Sub-systems Intern

- Collaborating with NASA mentors to design and analyze electrical and sensor subsystems for the LUCY Mission concept.
- Utilizing Siemens NX and JMARS for planetary data, CAD modeling, and remote sensing analysis into subsystem design.

Danfoss Turbocor – Tallahassee, FL

04/2024 – 06/2025

Mechanical/Manufacturing Engineering Intern

- Optimized compressor shim sizing and axial alignment, improving first-pass yield rate by 63% on blueprint operation.
- Automated CMM inspection programs (PC-DMIS), reducing cycle times by 18% and ensuring micron-level accuracy.
- Designed and implemented leak-test fixtures in CREO, cutting production leak rate by 12% and improving process reliability. Conducted DFMEA on leak testing systems, implementing 6 process improvements.

Clocky, LLC – Pasadena, CA

05/2024 – 08/2024

Mechanical Engineering R&D Intern

- Designed CAD assemblies and executed motion simulations in SolidWorks and Simulink for electromechanical subsystems.
- Prototyped and validated designs via 3D printing and MATLAB performance testing. Produced reports on motor selection and product feasibility, working cross-functionally with the product design team.
- Produced 4 technical drawing packages, 4 BOMs, and IP documentation supporting product patent applications.

TECHNICAL SKILLS AND ACHIEVEMENTS

- Theta Tau – Phi Delta Chapter (Executive Board Marshal, Professional Development Chair (Co-Chair of the Semester), Brotherhood Chair), Engineers without Borders, American Society of Mechanical Engineers.
- Python, C, C++, SolidWorks, AutoCAD, FMEA, CMM, Simulink, MATLAB, Excel, Minitab, COMSOL Multiphysics.
- International Baccalaureate Diploma, Author (in review): *Mach & State - American Defense Policy Throughout Technological Explosion*. Trilingual (English, Amharic, Spanish).