Jezael Concepcion

Aerospace Engineer | Thermofluids | Hypersonics | Combustion & CAD Modeling

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Education

University of Central Florida	May 2025
Bachelor of Science in Aerospace Engineering	GPA 3.2/4.0
MSAE- ThermoFluid Aerodynamic Systems Design and Engineering	Present

Relevant Coursework: Flight Mechanics, High-Speed Aerodynamics, Aerothermodynamics of Propulsion Systems, Thermodynamics, Structures and Properties of Aerospace Materials, Control Systems.

Skills and Certifications

Modeling & Software: SolidWorks, CREO, Fusion360, AutoCAD, Open Rocket, ANSYS Fluent, SolidWorks Flow, LabView

Programming & Scripting: MATLAB, C++, Python (Self Taught)

System Tools/Documentation: Excel, GIS, Technical Drawings, System Analysis, Interface Definition, Systems Documentation

Certifications: Certified SolidWorks Associate (CSWA), Level 1 HPR Certification

Languages: Spanish (Native), English (native), French (intermediate)

Clearance: U.S. Citizen | Eligible for DoD Security Clearance

Professional Experience

Engineering Intern, Public Works – Altamonte Springs   January 2024 – February 2025

- Revised engineering drawings and standard details in AutoCAD, ensuring dimensional accuracy and compliance with engineering specifications.
- Analyzed mechanical system layouts and validated dimensional requirements using CAD and engineering drawings.
- Performed field verification of installed infrastructure against drawings and documented variances for design updates.
- Collaborated with the project engineer and field supervisors to resolve documentation inconsistencies and ensure alignment between engineering designs and site conditions.

Technical Projects

Return to Launch Site Rocket Challenge – Propulsion Lead   August 2024 – April 2025

- Performed thrust matching, stability analysis, and propulsion margin calculations to support motor selection and vehicle performance optimization.
- Conducted thrust curve and trajectory analysis using OpenRocket, selecting the Aerotech I1600R motor for a 64% thrust-to-weight increase.
- Designed and built a fully integrated custom recovery system featuring GPS, servos, a live camera, and a 3D-printed electronics bay.
- Utilized SolidWorks Flow and OpenRocket to simulate over a dozen flight conditions, analyzing aerodynamic stability and recovery effectiveness.
- Validated propulsion system and recovery performance under flight conditions, comparing predicted vs. actual thrust and stability behavior.

Combustion Torch Igniter Design   November 2024

- Designed and analyzed a hydrogen-oxygen torch igniter based on NASA reference systems for liquid bipropellant engine ignition.
- Created a high-temperature combustion chamber CAD and modeled thermal loads to support structural design decisions.
- Evaluated candidate ignition architectures (catalytic, pyrotechnic, resonant) for reliability, thermal performance, and integration feasibility in liquid propulsion systems

Hypersonic Propulsion System Design   December 2023

- Modeled Mach 6 nozzle flow fields, including shock positioning, compressible flow relations, and stagnation condition analysis.
- Performed compressible flow analysis to calculate stagnation pressure, required tank count, and shock positioning using normal shock and isentropic flow relations.
- Compared pressure requirements for ideal expansion versus shock-maintained flow; evaluated stoichiometric hydrogen combustion parameters for reaction flow scenarios.

Leadership and Involvement

- Knights Experimental Rocketry (KXR) - Researched Thermal Cooling of bipropellant systems (FAR 10K Project)
- SolidWorks Student Leadership Program – UCF Member
- National Association of Rocketry (NAR) – Active Member