Vireli Anbarasu

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EDUCATION

University of Central Florida (Burnett Honors College) - Graduation Year: 2025 GPA: 3.82
Bachelor in Aerospace Engineering (Minor in Computer Science)

SKILLS

- **Coding/Software:** Java (proficient), Python (proficient), C, C++, MatLab (proficient), LabView, AGI Satellite Tool Kit
- **Finite Element Analysis/Computational Fluid Dynamics:** Ansys, StarCCM+
- **Computer Assisted Drafting/Computer-Aided Design:** Autodesk Fusion 360 (proficient), Solidworks (CSWA certified, proficient), Siemens NX (basic), Creo, MathCAD
- **Manufacturing:** 3D printing (FDM and SLA), CNC machining (basic), drawings, mill, bandsaw, lathe
- L1 High Power Rocketry Certified

PROFESSIONAL EXPERIENCE

Florida Space Institute: **Aerospace Engineer** (May 2024 - Present)

- Conducted tests on lunar simulant aggregate to determine collision behavior
- Designed and updated components of dry drop tower for aggregate testing; worked on implementing cryogenics for cold drops
- Trained in manufacturing using the mill, bandsaw, lathe, etc.

Lockheed Martin Missiles and Fire Control: **Systems Engineering Co-op** (June 2023 – May 2024)
Guidance, Navigation & Controls (GNC)

- Implemented embedded software (C++) and analyzed models of aircraft and ground vehicle controls using Matlab
- Experienced software development lifestyle, such as writing verification and model description documents
- Worked in a team using agile methodologies for model-based engineering

University of Central Florida: **Undergraduate Lab Assistant** (Jan - May 2023)

- Assisted professor in lectures, set up lab equipment, and monitored the students
- Led help session hours for multiple levels of classes to teach advanced physics concepts

Limbitless Solutions: **Mechanical Engineer Intern** (Jan – Dec 2022)

- Completed self-driven projects involving CAD design and Arduino programming
- Repaired, built, and wired prosthetic hands; worked with a team to ship 30 personalized limbs out in one semester
- Designed CNC machined molds for plastic injection of prosthetic parts and other tools

PROJECT EXPERIENCE

Senior Design DEP UAV: **Team Lead, Aerospace Engineer** (Aug 2024 – Present)

- Designing and manufacturing a subscale UAV that utilizes distributed electrical propulsion to carry a payload
- Simulating CFD and FEM using StarCCM+, Ansys Fluent, and Ansys Mechanical
- Presenting design reviews, as well as writing technical documentation for risk analysis and hand calculations

Experimental Fluid Mechanics Lab: **Undergraduate Researcher** (Feb 2024 – Present)

- Undergraduate thesis on using pneumatic artificial muscles to minimize load experienced by morphing wings
- Researched bioengineering projects; LabView and MatLab for data analysis, Ansys for fluid-structure interactions
- Designed pressure control board and artificial muscle configuration for data collection from force transducers

Knights Experimental Rocketry: **Solid Development Testing Lead** (Jan 2023 – Aug 2024)

- Designed and manufactured the first solid propellant motor rocket to be static fired in the organization
- Simulated the nozzle using CFD (StarCCM+) and the overall motor with FEA (Ansys Mechanical)
- Headed testing team to CAD and manufacture a strand burner for burn characterization of new experimental solid propellant mix and conduct pressure vessel burst testing for the motor
- Developed data acquisition (DAQ) system and pressure system, along with the relevant drawings, including piping and instrumentation diagrams (P&ID) and engineering drawings using SolidWorks for fabrication

L'SPACE Mission Concept Academy: **Mechanical Engineer, CAD Team** (Jan – March 2022)

- Designed a mission to send a payload to Shackleton Crater to collect information about the hydrogen composition of the lunar polar regolith
- Designed chassis and drive train of rover and arranged the payload within in Solidworks and NX Siemens; simulated using FEA and did risk analysis of final rover design to prove viability of the project and present a PDR

FIRST Robotics Competition: **President, Lead Programmer, Marketing Head** (Aug 2018 – May 2021)

- Implemented computer vision and motion magic with Java for the robot's autonomous capability
- Taught workshops for manufacturing skills - vertical and horizontal bandsaw, basic wiring and soldering, and CAD