

Yannick van der Laan

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Profile

Engineer driven by a passion for using the design process as a creative tool to solve real-world problems. Approaches engineering as a form of art, blending intuition, empathy, and technical skill to create solutions that improve lives.

Education

University of Florida – Bachelor of Science in Mechanical Engineering

August 2021 – May 2025

- Certified SolidWorks Associate (Mechanical Design) – Associate Level GPA: 3.54/4.00
- Space Systems Design Club – Mechanical Design Lead / Vice-President Cum Laude

Skills

Technical: SolidWorks, Autodesk Fusion, Abaqus, GD&T, Lean Six Sigma, Root Cause Analysis, FEA, DFMA

Interpersonal: Project Management, Leadership, Technical Communication, Emotional Intelligence, Problem Solving

Programming: C++, Python, Arduino, MATLAB

Projects

Auto-Gyro CanSat System with Multi-Camera Payload

August 2024 – June 2025

- Designed and developed a CanSat system with two-stage descent, including parachute deployment and auto-gyro payload separation, meeting altitude-triggered deployment and descent rate requirements
- Designed mast, hub, and blade assembly for auto-gyro in Autodesk Fusion for stable 5 m/s descent
- Modeled and 3D printed a rotary stage separation mechanism to enable altitude-triggered payload deployment
- Led a 16-member team in the Space Systems Design Club; ensured compliance with mass, budget, and schedule constraints and presented successful Preliminary and Critical Design Reviews (PDR/CDR) to industry engineers
- Presented final design and successfully launched at international competition, earning an 80% mission score

Filament Recycling Measurement and Spooling System

December 2024 – May 2025

- Led a team of ten engineers at the University of Florida to prototype and present a filament measurement and spooling system; created full mechanical drawings with GD&T and a detailed design report
- Designed recycler enclosure in Autodesk Fusion to integrate subsystems, housing, motors, and microcontroller
- Programmed touchscreen LCD interface in C++ for unified user control and real-time system monitoring
- Coordinated with financial officer to outsource key components other teams built in-house, allowing earlier prototyping and reducing lead time by 71%
- Executed iterative development strategy that kept the project two weeks ahead of schedule and within budget

Planetary Reentry CanSat with Delicate Payload Protection

September 2023 – June 2024

- Designed a planetary entry probe with detachable aero-braking heat shield and dual-stage descent system to protect a delicate payload, using passive control fins for orientation stability
- Created deployable aero-brake system in SolidWorks that reduced terminal velocity by 44%
- Optimized probe container in Abaqus to reduce mass by 38%, enabling lighter descent and subsystem expansion
- Integrated probe subsystems in SolidWorks to produce a functional assembly for PDR and CDR

Planetary Probe Descent Simulation CanSat

September 2022 – May 2023

- Designed a CanSat to simulate the landing sequence of a planetary probe using multi-phase descent: parachute deployment, heat shield aerobraking, and post-landing actuation
- Developed nichrome wire separation mechanism in SolidWorks for heat shield deployment and probe release
- Designed impact-dampening landing system that reduced landing force by 68%, ensuring payload integrity