Rowan Jansens

Mechanical Design Engineer

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Education

Olin College of Engineering — Needham, MA
BS in Mechanical Engineering — September 2021 - May 2025

- **Relevant coursework:** Solid Mechanics, Mechanical Prototyping, Multivariable Calculus, Thermodynamics, Linear Algebra, Modeling and Simulation, Mechanical Analysis

Skills

- **Fabrication:** Lathe, Mill, CNC Router, TIG Welding, 3D Printing, Laser Cutting
- **Programming Languages:** MATLAB, Python, C, C++, LaTeX
- **Software:** SOLIDWORKS, Adobe Illustrator, DaVinci Resolve
- **Personal Interests:** FPV Freestyle, Video Production, Performing Arts

Experience

Olin Electric Motorsports (Formula SAE Electric) — Needham, MA
Drivetrain Engineer — September 2021 - Present

- Currently redesigning vehicle chain tensioner mechanism to reduce shock loading caused by excessive chain slack
- Upgraded steering system for electric test platform vehicle to support tighter cornering performance and enhanced driver feel by replacing Pitman linkage with rack and pinion
- Performed hand calculations on steering mount solution and used SolidWorks FEA to verify strength of the design under axial and transverse loading conditions

Dynamic Vibration Balancer — Needham, MA
Personal Project — January 2022 - May 2022

- Developed dynamic vibration balancer test stand for applications in micro turbojet research and manufacturing
- Wrote mechanical vibration simulation in Matlab to prove feasibility and functionality of design prior to fabrication
- Utilized digital accelerometers, optical encoders, and Arduino to collect measurements from test stand
- Achieved 3x reduction in vibrations amplitude from the test object before and after balancing and angular measurement standard deviation of 1 degree

Los Alamos National Laboratory — Los Alamos, NM
Engineering Intern — Summer 2020, 2021, 2022

- Developed and applied unscented Kalman filter algorithm to GPS data collected on current CubeSat mission to improve satellite orbital determination and prediction
- Published research paper in Department of Energy scientific database (DOI: 10.2172/1880471)
- Tested algorithm on real flight data and demonstrated up to 20x improvement in accuracy when compared with previous procedures
- Translated algorithm into C and integrated it with existing flight code

Olin Rocketry (Spaceport America Cup) — Needham, MA
Lead Avionics Engineer — September 2021 - Present

- Designed, implemented, and tested flight control software to detect rocket apogee using Kalman filtering and a suite of digital components including 9-axis IMU, barometric altimeter, and Teensy 3.6 microcontroller
- Performed multiple ground testing procedures to demonstrate flight worthiness of system prior to launch
- Established TelePy, an open-source ground station GUI used to visualize flight data and metrics in real time

NMSA Robotics (RoboRave) — Santa Fe, NM
Engineering Lead — September 2018 - March 2020

- Designed, built, and programmed an Arduino-based robot to compete in RoboRave international line-following competition
- Prototyped and perfected electromechanical payload deployment mechanism for reliability and to meet competition design constraints