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Active DoD Secret Clearance

Cody Newton

Summary

Aerospace Engineering student at CU Boulder with hands-on propulsion experience maintaining F-16 F110-100 engines in the Air National Guard. Proven ability to design, analyze, and test aerospace systems — from boost-glide vehicles to roller coaster simulations — integrating propulsion, aerodynamics, and structural mechanics. Active DoD Secret Clearance.

Education

2023–Present **B.S. Aerospace Engineering**, *University of Colorado Boulder*
GPA: 3.64
Minors: Computer Science, Engineering Management, Quantum Engineering

Experience

2022–Present **Aircraft Propulsion Technician**, *Air National Guard, Buckley SFB, CO*
- Performed diagnostics and repairs on F-16 F110-100 engines
- Maintained logs for compliance and safety regulations
- Completed Airman Leadership School (ALS)

Summer 2023 **General Laborer**, *Bullet Welding and Services*
- Assisted in excavation, framing, and metal fabrication in rugged field environments

Projects

Boost-Glide Vehicle 2025 — Led the design, fabrication, and flight testing of a lightweight boost-glide vehicle capable of traveling over 100 meters. Integrated propulsion systems with optimized aerodynamic shaping. Utilized simulation tools and physical prototyping to meet flight performance requirements. Oversaw a small team and coordinated with lab technicians for final launch testing.

Airfoil Stress Analysis 2024 — Performed finite element analysis (FEA) and hand calculations on a foam-core airfoil spar to predict stress and deflection. Designed and constructed a custom wiffle tree test fixture to apply realistic loading. Conducted experiments and validated theoretical predictions through physical measurements and data analysis.

SRL Launch Procedures 2024 — Assisted CU Boulder's Sounding Rocket Lab (SRL) Liquids Team in formulating launch procedures and checklists for Boomslang, an ethanol-fueled, nitrous oxide oxidized rocket. Helped integrate safety protocols and coordinated roles between propulsion, avionics, and structures subteams for successful static tests.

Real-Time Swiping App 2025 — Collaborated on the development of a full-stack web application for restaurant selection using real-time user interaction. Implemented server-side logic and live communication via web sockets to synchronize swiping across devices. Focused on usability, multi-user coordination, and responsive UI design.

Coaster Simulation 2025 — Programmed a physics-based MATLAB simulation modeling a roller coaster under safety constraints. Simulated and visualized g-forces and velocities along a 3D track profile. Tuned design parameters to ensure safe acceleration profiles while maintaining ride dynamics. Presented findings with graphical outputs and system insights.

Skills

Technical — Propulsion systems, aero/structural analysis, diagnostics, fabrication
Programming — C++, C, Java, Python, MATLAB, C#
Tools — MATLAB, SolidWorks, MS Office, LaTex
Soft — Leadership, teamwork, critical thinking, problem-solving

Certifications

Security — DoD Secret Clearance
Training — Airman Leadership School, CPR Certified