

Charles (Charlie) Steinman

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WORK EXPERIENCE

Northrop Grumman Corp. (NGC), Dulles VA

June 2025 - August 2025

Integration & Testing Mechanical Engineering Intern

June 2026 - August 2026

- Supported assembly of the “Cygnus” ISS resupply satellites (NG24 and NG25) and other space systems (HALO, MRV/MEV, and more), contributed to assembly and tests of spacecraft. Hands-on experience with flight hardware in “100k” ISO class 8 cleanrooms.
- Developed assembly improvements like a torque star-pattern system to simplify Cygnus’s Service Module mating to the Pressurized Cargo Module, tool shadowing to identify missing pieces, and implemented new processes for various flight adhesives.
- Recalculated and streamlined proof load specification for over 200 satellite lifting fixtures, applied structural analysis principles to ensure safety and compliance in mission-critical hardware operations.

Caterpillar Inc. (CAT), Clayton NC

May 2024 - July 2024

Small Wheel Loader Structures Design Engineer Intern

- Developed nine iterative concepts for a concrete-filled steel-shell counterweight for the upcoming lower-priced “General Construction” Small Wheel Loader (SWL), analyzing moment, turn radius, departure angle, component interference, manufacturability, and material costs.
- Performed Finite Element Analyses (FEA) to test failure cases in the SWL articulation lockout, ensuring compliance with International Organization for Standardization (ISO). Simulations pinpointed the incorrect installation of the safety link as the failure.
- Applied external (ISO) and internal (1E) quality standards across all projects, addressing variables from operator size to bolted joint criteria to ensure the safety and strength of the system.

Hendrick Motorsports (HMS), Concord NC

June 2023 - August 2023

Design Engineer Intern

- Designed race components for NASCAR Cup Series cars (5, 9, 24, 48) using Siemens NX, including intake mounts, drill fixtures, gear shift force calculations, shims, and bolts. Inspected over 100 parts for compliance with NASCAR Cup Series regulations and revised drawings
- Assisted HMS Defense in product development, revising components, and creating comprehensive documentation for products and support equipment delivered to the US and international militaries.
- Contributed to projects including the Medical Chinook trailer training documentation, STEED Wheel Hub redesign, General Motors' Infantry Squad Vehicle (ISV) fixtures, part modeling, and other small components.

EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg, VA

Bachelor of Science in Mechanical Engineering

Cumulative GPA: 3.70

Graduated: May 2026

Master of Science in Mechanical Engineering (Metal Additive)

Cumulative GPA: 4.00

Expected Graduation: May 2027

LEADERSHIP AND ACTIVITIES

BOLT Electric Motorcycle Race Team, Blacksburg VA

October 2022 - May 2026

President (2025/2026), Chassis Engineer

- Led a team of 100+ engineers with a mid-five-figure design and build budget, managing and promoting the team at events.
- Drafted mockups of a team-first electric dirtbike frame, housing a 50hp motor with “warm”-swappable capabilities for senior design.
- Designed and simulated the 400kW motor’s mount, changing from steel to aluminum for 6lbs of weight savings.

Thermodynamics (ME2134) - Dr. Amrinder Nain, Blacksburg VA

Jan 2025 - May 2025

Teachers Assistant

- One of four selected TAs for the sophomore year thermodynamics class.
- Assisted with homework and foundational understanding of class material.

Swim Club at VT, Blacksburg VA

August 2022 - May 2026

- Participated in weekly practices, social events, and fundraisers.
- Competed in numerous invitational swim meets at other schools such as UVA, JMU, and Clemson University

SKILLS

Workshop Knowledge

- 3-axis CNC, Laser/Water cutting, MIG, TIG, and Stick Welding, Metal Casting, FDM/PBF Additive, Woodworking, Mill/Lathe.

CAD and Coding Experience

- Siemens NX 2007 and Teamcenter (11/14)
- Creo Parametric, Simulate (FEA), and Viewer
- Autodesk AutoCAD (certified), Inventor (certified), and Fusion 360 (main hobbyist)
- Dassault Systemes SOLIDWORKS and Simulate
- MATLAB coding and data analysis
- Onshape and Blender
- Java and C++ coding
- Arduino / ESP 32 Hardware Design
- Microsoft Office & Google Services

HONORS AND AWARDS

John L. Pratt Merit Scholarship, College of Engineering

August 2022 - May 2026

Dean’s List

Awarded All Eligible Semesters