Andrew Burcher

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Education

B.S. in Mechanical Engineering, B.S. in Robotics and Mechatronics | GPA: 3.91 **Blacksburg, VA**
Virginia Tech August 2022 – May 2026

- Minor in Computer Science

Work Experience

Max Planck Institute for Plasma Physics **Garching, Germany**
Research Engineering Intern – DAAD RISE Scholar May 2025 – August 2025

- Contributed to EPOS, the first matter–antimatter (electron–positron) stellarator
- Designed the thermal, electrical, and structural infrastructure for EPOS
- Manufactured and tested non-planar superconducting coils
- Developed Python software to simulate plasmas in electromagnetic fields

General Dynamics Mission Systems **Marion, VA**
Mechanical Engineering Co-Op May 2024 – December 2024

- Built and programmed a high-accuracy robotic measurement system for RADAR applications
- Coded automations for CATIA and Excel to model and analyze complex geometry
- Conducted research and development on advanced composite materials
- Simulated and prototyped a novel manufacturing technique

E.K. Fox & Associates **Chantilly, VA**
Mechanical Engineering Intern May 2023 – August 2023

- Drafted mechanical, electrical, and plumbing construction documents in AutoCAD and Revit
- Researched equipment and contacted manufacturers

Additional Experience

Research Team Lead – 3D Printed Magnetodielectric Materials August 2023 – Present
GrayUR at Virginia Tech

- Leading a research team developing 3D-printed magnetodielectric materials
- Built an infrared/visible imaging system on Raspberry Pi for the AutoPlane UAV project

Senior Design Team Lead – Submicron Additive Manufacturing August 2025 – Present
Virginia Tech

- Developing the electronic, control, and encoder systems for a 3D printer with submicron precision

Structures and Manufacturing Lead – Jet-Powered RC Aircraft October 2023 – May 2024
Mach Works at Virginia Tech

- Managed 10+ students in the research, design, simulation, manufacturing, and testing of an aircraft structure
- Led manufacturing of fuselage, wings, and internal structure
- Led internal structure design and overall component integration

Skills

CAD: CATIA V5, SolidWorks, Fusion 360, Siemens NX, AutoCAD, Revit
Programming: C, C++, C#, Python, MATLAB, VBA, Java, LabVIEW
Computer Hardware: Arduino**,** FPGA, Raspberry Pi, STM32
Lab Systems: Vacuum Systems**,** Cryogenics**,** Superconductors
Software & Tools: Ansys Mechanical**,** Excel Automation**,** PTC Windchill
Manufacturing: Composite Manufacturing**,** 3D Printing**,** GD&T