Andrew Gothro

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Education

Graduate of Gonzaga University — Graduated: May 9th 2021

Bachelor of Science - Major in Mechanical Engineering, Minor in Physics

Work History

Gonzaga University - Spokane, WA — *2017-2021 Academic years*

Machine Shop Lead

- Assisted with manufacturing a wide range of parts for various clubs and senior projects.
- Taught students of all backgrounds skills to design and create parts on their own.
- Refined skills in metal machining, using mills, lathes, hand tools, and MIG welding.

Tethers Unlimited - Bothell, WA — *June-August 2020*

Engineering Intern

- Designed and performed high-precision tests for experimental spaceflight operations.
- Produced full test report, in-depth analysis, and thorough documentation for an entire testing process.
- Updated existing tools and software to enable new kinds of manufacturing processes.
- Assisted in re-qualification and improvement for proven SmallSat components.

Collins Aerospace - Everett, WA — *May-August 2019*

Materials and Flammability Intern

- Developed cure process for new composite layup process.
- Produced engineering drawings and models for multiple projects using both Solidworks and NX.
- Assisted with detailed failure mode effects analysis for interior monuments for OEM customers.

Boeing – Everett, WA — *June-August 2016*

High School Fabrication Summer Internship

- Placed in the Innovation Center section of the Electrical Systems Resources Center (ESRC).
- Increased efficiency through prototyping of equipment for workers in an industrial setting.

Skills

Solidworks — 8 years experience

- Designed parts, assemblies, and drawings for design planning and CNC machining.
- Versed in design for assembly and repair, accommodating specific methods
- Experienced in bottom-up, top-down modeling as well as configurable parts.
- Certified Solidworks Associate - 2018

Additive Manufacturing — 7 years experience

- Led my capstone senior design team to design and build a simultaneous 5-axis FDM 3d printer, and adapt existing software to produce non-planar layers for improved surface finish, mechanical properties, and aesthetic appearance.
- Experienced in mechanical design specifically for optimizing parts for 3d printing.

Other skills:

MatLab, Gcode for 3d-printers, Microsoft Office, Failure Mode Effects Analysis (FMEA), Engineering Drafting, Composite layups

Projects

Capstone project — *2020-2021*

- Designed and built a custom 5-axis FDM 3d printer intended to print non-planar layers.
- Modified existing 3d printer to accommodate components as well as more capable control hardware.
- Developed script to produce translational tesselated layers to demonstrate improvement in mechanical properties.

Design Lead for Gonzaga SAE Baja Club — *2019-2021*

- Led design for steering, suspension, braking, drivetrain, and frame systems.
- Developed team's first custom gearbox, while also incorporating a selectable 4wd system.
- Optimized component geometry for off-road racing characteristics, durability, ease of manufacturing, and repair.

Gonzaga ASME Rocketry Club — *2017-2021*

- Worked as integration team lead, coordinating sub-system integration.
- Organized component layout and configuration for optimal mass properties and flight performance.
- Led construction of the team's first custom carbon-fiber nose cone, while teaching layup methods.

Boy Scouts — *2007-2017*

- Eagle Scout, June 1st, 2017
- Project: Designed and built custom storage shed for local YMCA.