**Alan Browning**

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**EDUCATION**

**Bachelor of Science in Mechanical Engineering (BSME)**  **Pittsburgh, PA**

*University of Pittsburgh Expected Graduation: April 2021*

* Engineering Simulation in Design Certificate
* GPA: 3.95

**PROFESSIONAL WORK EXPERIENCE**

**Mechanical Engineer** **Pittsburgh, PA**

*Covestro LLC (Formerly Bayer Material Science) May 2019 – December 2020*

* Conducted feasibility studies on 30+ automotive, aerospace, and electronic parts to ensure viability of Covestro resins within new applications
* Completed structural and vibrational analyses on mechanical systems via Abaqus to quantify stresses due to loadings, impacts, and fatigue
* Performed thermal & fluid analyses via Autodesk CFD to optimize maximum temperatures within heatsinks for batteries, LEDs, and other electronic hardware
* Created designs and sketches for products to be manufactured with polycarbonate, creating a weight reduction and a cost savings of up to $10,000 per component
* Designed tensile testing fixtures using geometric dimensioning and tolerancing principals (GD&T)
* 3D printed & injection molded parts for various commercial and research applications
* Produced technical documentation on material data for new Covestro resins

**Student Assistant Pittsburgh, PA**

*University of Pittsburgh Department of Mechanical Engineering August 2020 - Present*

* Aided in labs based on data acquisition using sensors within electromechanical systems
* Provided feedback to students on test instruments, statistics, and numerical analysis of lab data
* Graded projects, labs, homework, and exams for 100+ students

**TECHNICAL SKILLS**

**Technical Skills**

* Root cause analysis (RCA)
* Design for manufacturability (DFM)
* Application and product development
* Finite element analysis and computer aided design
* Failure mode & effect analysis (FMEA)

**CAD & FEA Software**

* Abaqus (standard & explicit)
* ANSYS (APDL)
* Autodesk (AutoCAD, Fusion360, & CFD)
* Hyperworks (Hypermesh)
* Solidworks

**Computer Programming Languages**

* Arduino
* C/C++
* Java
* MATLAB
* Python
* UNIX

**Relevant Coursework**

* Thermodynamics & Heat Transfer
* Mechanical Design
* Manufacturing of Materials
* Fatigue & Fracture Mechanics

**RELATED EXPERIENCE**

**Mechanical Subteam Member Pittsburgh, PA**

*University of Pittsburgh Society of Astronautics and Rocketry August 2020 - Present*

* Designed and manufactured a rocket for the NASA Student Launch Challenge
* Simulated the aircraft’s performance to verify airframe & motor (engine) selections
* Conducted a failure mode & effect analysis on the motor, fins, & airframe
* Communicated with mechanical subteam to deliver 3 design reviews (PDR, CDR, FRR) to NASA

**Study Abroad Bavaria, Germany**

*Plus3: Germany May 2018 – June 2018*

* Conducted 3 presentations on automotive technology and company strategy analysis