Benjamin Freeman

Website: freemanbenjamin.github.io
Email: benjamin.freeman2015@gmail.com

Summary

- **Materials Engineer with experience in 3D printing, aerospace, and laboratory settings**
- **Background in 3D printing, material properties, CAD, prototyping, design, testing, R&D, and engineering**

Experience

3D Print Bureau of Texas, Houston, TX — Mar 2018-Present
- 3D Printing Technician
- Maintenance, calibration and operation of eleven 3D printers (FDM, SLA, PolyJet, Powder Fusion)
- Process improvement, documentation of parts, and inventory of materials
- Utilize Solidworks, 3D Sprint, and GrabCAD Print to convert customer files to 3D printing formats and make features more printing-friendly
- Post-processing of completed parts and preparation for shipping to customers

University of Texas at Austin, Austin, TX — Aug 2015-Jan 2016
- Research Assistant for project studying Laser Ablation of Microparticle Aerosols
- Creation of SOP's, equipment maintenance, operation of laser and other equipment

Senior Capstone Design, Rice University — Aug 2014-May 2015
- Acted as team lead for project to design and fabricate a nanomechanical testing device for use in SEM
- Created CAD models, assisted in machining, worked with user to test/modify design

SpaceX, Los Angeles, CA — May 2014-Aug 2014
- Propulsion Intern – High Temperature Composite R&D
- Worked as part of an R&D team to create ceramic matrix composites for use as engine nozzle liners
- Performed CAD tooling design and 3D printing of tooling prototypes for filament winding operation to improve manufacturability and reproducibility of composite reinforcement architecture
- Developed a method and database to find carbon fiber tensile strengths

E. V. Barrera Group, Rice University — Dec 2012-Sep 2014
- Undergraduate Researcher for project to create and test new hypervelocity shielding materials
- Designed, fabricated, and analyzed composite materials composed primarily of carbon nanotubes, nanocrystalline aluminum alloys, and polymeric materials
- Operated two-stage light gas gun to test hypervelocity impact response of composite shielding materials for potential use in spacecraft

Education

Rice University, Houston, TX — Aug 2011-May 2015
- B.S. in Materials Science and NanoEngineering
- GPA: 3.65/4.00
- Relevant Coursework: Senior Capstone Design, Properties of Polymers, Junior Design, Metallography and Phase Relations, Mechanical Properties of Materials, CAD, Ceramics and Glasses, Crystallography and Diffraction, Nanoscience and Nanotechnology, Mechanics of Solids, Transport Phenomena in Materials Science, Organic Chemistry

Technical Skills

Software: SolidWorks, Unigraphics NX, Autodesk Inventor, Python, HTML/CSS, Matlab
Materials Testing and Characterization: Mechanical Testing (Tensile, Compression, Hardness), Optical Microscope, SEM
Fabrication Skills: 3D Printing, Compression Molding, Laser Cutting, VARTM, Lathe, Vertical Mill, Injection Molding

Organizations and Leadership

Rice Materials Science and Engineering Society Founder and President — Oct 2013-Apr 2015
AIAA Rocketry Team Member — Aug 2013-May 2014
Material Advantage Member — Aug 2012-May 2015
Community Service Council Representative — Aug 2011-May 2012