Brandon Harris

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Education

BS in Aerospace Engineering — May 2016 – CU Boulder

MS in Aerospace Engineering, Fluids and Propulsion Focus — Dec 2017 – CU Boulder

Technical Skills

- Understanding of aircraft design fundamentals, including distributed electric propulsion and VTOL
- Extensive design and manufacturing for aerospace application, including CNC mill/lathe, welding, woodworking, and metal and plastic additive manufacturing/rapid prototyping
- Data analysis in MATLAB/Octave and Python
- SolidWorks/SolidCAM, Onshape, and Catia for part design
- Carbon fiber manufacturing and repair
- Data acquisition and actuator control with LabVIEW, Phidgets w/Python, and Arduino

Experience

Opener – Flight Test Engineer — May 2018 - Present

- Developed vehicle operator manual and training curriculum.
- Organized logistics, scheduling, and subsystem engineering personnel to carry out 150+ local, remote and international flight test sessions.
- Led flight test sessions, in addition to performing all other flight testing roles at some point.
- Designed and implemented subsystem test apparatuses.
- Systems level management of virtual reality flight sim chair, including VR development with Unity.
- Various carbon fiber, wood, and metal manufacturing for repairs and test stands.

CU Wind Tunnel Lab – Research — August 2017 - December 2017

- Design and test of an active closed loop feedback flow control system for a supersonic wind tunnel.
- Designed and 3d printed supersonic nozzles and actuator mechanisms.
- Developed LabVIEW UI for pressure and temperature data acquisition and PID actuator control.

CU AES Machine Shop – Design and Manufacturing Engineer — August 2016 - December 2017

- Design and manufacture of hardware and electronics for undergraduate labs, professional research, and senior and graduate projects.
- Designed and manufactured a prototype column buckling test apparatus in SolidWorks and SolidCAM, including stress analysis.
- Scaled manufacture of buckling test rigs up to 12 units for use in an undergraduate structures lab.

Graduate Projects – AMARCS – Test and Systems Engineer — Aug 2016 – May 2017

- Served as testing lead and systems engineering lead. Multi-year graduate design project.
- Worked on a team of 10-12 students to design, manufacture, and test a ULA sponsored additive manufactured, regeneratively cooled, 50 lb thrust reaction control rocket engine.
- As systems engineering lead, oversaw interfaces between subsystems and worked on high level tasks designing and testing the feed system, electronics and software control system, and ignition system.
- As test engineer, developed test procedures and coordinated full day, offsite testing of rocket.

Other

- Hobby 3d printing, basic circuit design and electronics assembly, Photoshop and Blender for 2d/3d graphic generation, exposure to c++, c#, OpenFOAM, SolidWorks Flow Sim, Simulink
- Excellent Googler.
- Former ski racer, great cook, personal project enthusiast. Ask me about my light!