

**PROFESSIONAL SUMMARY:**

Degreed mechanical engineer with minor in electrical engineering, EIT. Experience with mechanical design, robotics, finite element structural analysis, systems engineering, aerospace component testing, and spacecraft design. US citizen with ability to qualify for security clearance.

**EXPERIENCE:**

- 4/14-Now **Spaceflight Systems (formerly Andrews Space), Seattle, WA**  
**Mechanical Engineer:** Developed SCOUT imaging satellite and SHERPA satellite rideshare vehicle.
- **Testing:** Designed procedures, made equipment, executed tests, and analyzed results of: thermal cycle, vibration, shock, vacuum bakeout, torque-tension, and propulsion leak detection.
  - **Production Engineering:** Inspected parts and assemblies; solved manufacturing issues through vendor management, documentation improvement, and design changes. Created manufacturing process for spacecraft avionics and assembled flight systems. Repaired vacuum chamber and managed clean room. Designed tooling for spacecraft assembly.
  - **Problem Solving:** Found and repaired propulsion tank leak without modifying pressure vessel via custom fitting. Discovered existing fastener galling problem before integration, successfully developed and tested solution with no impact to schedule.
- 2/13-3/14 **Electroimpact, Mukilteo, WA**  
**Project Engineer:** Developed high precision mobile robot that drilled holes and inserted fasteners to join fuselage on automated aircraft assembly line. Cradle to grave (requirements definition, design, modeling, analysis, drawing, contract manufacturing, inspection, assembly, test and installation) on:
- **Guidance system:** Enabled human operator to drive 14-ton mobile robot within 2 inches of \$50M aircraft. Included high-power pneumatics, steel weldments, and electronic feedback.
  - **Safety interlock:** Hard stop with feedback that allowed robot to be positioned over aircraft wing.
  - **Testing/Process Development:** Developed testing program and determined machine parameters to achieve six sigma control on +/-0.0015" hole diameter tolerance in aluminum-lithium stacks.

**SELECTED INTERSHIPS:**

- 6/12-10/12 **Honeybee Robotics Ltd, Pasadena, CA**  
**Mechanical/Project Engineer Intern:** Conceptualized, designed, analyzed, assembled, and tested prototype Mars rock drill. Provided oversight of manufacturing. Delivered hardware in 3 months at <\$4000 BOM. Performed testing and analyzed data to characterize performance of flight hardware.
- NASA**
- 6/11-8/11 **Ames Research Center:** Design and development of micro-rover prototype. Analyzed system-level requirements, mission goals and generated subsystem requirements documents.
- 6/10-8/10 **Marshall Spaceflight Center:** Developed prototype robotic swarm for orbital debris cleanup. Integrated electronics package into mobility platforms. Developed hardware for tracking system.
- 6/09-8/09 **Jet Propulsion Laboratory:** Planned, developed, and executed software tests on computer simulations and hardware models for the chemical and mineralogy instruments on Mars rover.
- 9/07-1/09 **Montana State University Space Science Engineering Laboratory, Bozeman, MT**  
**Mechanical Engineer:** Assisted in the development of a miniaturized satellite (CubeSat). Designed, analyzed, contracted fabrication, and procured components for spacecraft attitude control system. Performed finite element analysis (FEA) of spacecraft structural components.

- STUDIES:** **Montana State University, Bozeman, MT**  
 BS Mechanical Engineering, Minor Electrical Engineering, Class of 2012, GPA 3.1/4.0  
 President & founder, Montana State SEDS (Students for the Exploration and Development of Space)  
 Winner, SpaceVision 2010 Business Plan Competition

- SKILLS:** **Designed parts for fabrication with:** Manual and CNC machining, lathe turning, sheet metal, bent tube, weldments, and 3-D printing (SLA & FDM)  
**Computer Aided Design:** Solidworks, Creo/PRO-E + Windchill, CATIA V5, Autodesk, OnShape  
**Analysis tools:** COSMOS, ANSYS, MathCad, Matlab, PSPICE  
**Manufacturing Experience:** Milling, turning, rapid prototyping, fused deposition modeling (FDM), tube bending, cryogenic plumbing, epoxy, part and weld inspection, clean room operations  
**Electronics:** Analog circuitry, Arduino, bread-boarding, soldering, solder inspection, ESD certified  
**Other:** LaTeX, ASME Y14.5, ISO-9001, AS-9100

- HOBBIES:** 3-D printing, robotics, hiking, camping, astronomy, high-powered rocketry, technical space blogging