

# Christopher Henderson

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Clearance: Obtainable / In-process

## EDUCATION

**Bachelor of Science in Aerospace Engineering (ABET Accredited)**  
GPA 3.5 • California State Long Beach

*Graduating May. 2020*

## RELEVANT COURSEWORK

Propulsion, Computational Fluid Dynamics, Finite Element Analysis, Programming, Heat Transfer, Aerospace Systems, Spacecraft Systems, Orbital Dynamics, Thrust Vector Controls, Lab View, Mechanical Design

## PROJECTS

### **Methalox Regenerative Rocket Engine**

*Aug. 2019 – Present*

- Regeneratively cooled rocket engine with 10,000N thrust designed to be additively manufactured.
- Heat transfer of cooling system shown to achieve thrust chamber wall temperature of 1240 degrees Celsius.
- Designed thrust chamber and cooling channels in Solidworks.
- CFD simulations done with Ansys Fluent.

### **Thrust Vectoring Proof of Concept**

*Jan. 2019 – Present*

- Designed and built mono-prop copter on gimbal system to obtain stable hovering.
- Uses two accelerometers to determine changing center of gravity and flight controller to achieve hovering.
- Mono-prop gimbals to mimic thrust vectoring of rocket engine.

### **Matlab Parametric Rocket Engine and Injector Design Script**

*Sept. 2019 – Dec. 2018*

- Wrote a detailed script in Matlab using NASA CEA data to determine design parameters for an optimized rocket engine.
- Script also returns injector design parameters and dimensions.

## EXPERIENCE

### **US Army Reserve - Bell, CA**

#### **Engineer Squad Leader**

*Sept. 2014 – Present.*

- Lead two teams of Army engineers to conduct combat engineering operations.
- Develop safety requirements for demolition/explosives training operations.
- Implement safety operations and procedures for engineering field exercises
- Manage platoon resources and equipment as needed to complete mission essential tasks.

Contact: Lt Parks, Michael (818) 823-0030 [Michaeltparks@gmail.com](mailto:Michaeltparks@gmail.com)

### **Specialized Claims Synergy - Remote**

#### **Heavy Equipment Specialist**

*April 2015 – Present*

- Manage damage assessment and appraisal of heavy equipment and machinery.
- Work with machinery suppliers to meet the needs of client's repair operation.
- Perform heavy equipment evaluations when replacement is needed.

Contact: Jason Fogel (602) 748-7624 [Jason@getscs.com](mailto:Jason@getscs.com)

### **Mardukis Projects – Woodland Hills, CA**

#### **Project Manager**

*Oct 2006 – Sept 2014*

- Managed commercial and residential construction projects.
- Made project schedule and coordinated with sub-contractors.
- Estimated material and man-power needs to complete projects.

Contact: Luke Ullett (323) 559-6953 [Luke@mardukisprojects.com](mailto:Luke@mardukisprojects.com)

## TOOLS USED

Python, C++, MATLAB, LabVIEW, MS Office, LaTeX, Solidworks, STAR-CCM, ANSYS, Design Modeler