**OBJECTIVE**

Aerospace Engineer seeking career in spacecraft propulsion.

**EXPERIENCE**

**Aerospace Engineer,** *General Atomics* **2018-present**

* Developed a stereo vision 3D tracking system using high speed cameras. The goal was to track the shrapnel pellets coming from the railgun projectile during a fuze event.
* Truth UAVs – flew uavs with RTK GPS and tracked their flights with radar. Post process to compare the radar data to truth gps
* Laser bore scanner – analyzed images taken down the railgun bore to check for wear and noogies
* Helstryke – thermal management system sizing model, thermal energy storage tank flow analysis
* TM – correlation analysis, frequency analysis, filtering
* Missile roll control – proximate time optimal control, sliding mode control, PID control

Matlab expo conference

Image analysis - sabot warping during shot, surface blemishes on 8MW motor

IR camera

Radar conference

RF seeker/radar learning

**TA and Research Assistant,** *University of Illinois* **2015-2018**

TA for the electric propulsion and plasma physics class. Topics covered:

Plasma physics, Hall thruster, ion thruster, resistojet, arcjet, pulsed plasma thruster, magneto plasma dynamic

Research assistant in the electric propulsion lab. I worked on:

Fusor, Helicon, RF power, vacuum chamber, laser interferometry, plasma

Research assistant in the fusion lab. I worked on:

Tokamak, plasma deposition, circuits, plasma, vacuum, slow motion imaging

**Team Lead/Structural Engineer,** Manned Mars Mission, *University of Illinois* **2016-2017**

Systems engineering, spacecraft structures, AIAA design competition, trade studies

**Empod,** Engineer and Business Associate **2013-2017**

CAD, IMDS, 3D printing, Manufacturing, Windchill

**Autosplice,** Engineering Intern **Summer 2014**

Metallurgy, CAD, electrical testing, cross sectioning, heat testing, IQMS

**EDUCATION**

**University of Illinois at Urbana-Champaign** **GPA: 4.00** **August 2018**

Master of Science, Aerospace Engineering

Electric propulsion, combustion, distributed and satellite control systems

**University of Illinois at Urbana-Champaign** **GPA: 3.97** **May 2017**

Bachelor of Science, Aerospace Engineering

Control systems, CFD, electric propulsion, systems engineering, UAVs, thermodynamics

**SKILLS & LANGUAGES**

* **MATLAB:** Image processing/analysis, Stereo vision, Simulink, Control systems, Model sizing
* **Software:** SolidWorks, Fluent, NX, Excel, Mathematica, Comsol, Abaqus
* **Programming:** Python, C++, Fortran, Java, HTML, Javascript, SQL
* **Other:** Linux, Windows, Git, Photoshop, Premier Pro

**ACTIVITIES**

* **Boy Scouts** – Eagle Scout, Order of the Arrow, National Youth Leadership Training
* **SAE** – Baja external chassis designer
* **Student Newspaper** – Writer and business manager for TechNews
* **Engineers Without Borders**
* **Ethics Bowl**

**PUBLICATIONS**

**Electric Propulsion Research,** *University of Illinois* **2017**

[arc.aiaa.org/doi/abs/10.2514/6.2017-4629](https://arc.aiaa.org/doi/abs/10.2514/6.2017-4629)

**Fusion Research,** *Princeton Plasma Physics Laboratory* **2016**

[nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202016/fec2016-preprints/preprint0582.pdf](https://nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202016/fec2016-preprints/preprint0582.pdf)