Kyle Stanevich

kylestanevich@gmail.com   kylestanevich.github.io   (815) 895-1098

SUMMARY

Aerospace Engineer with research background. Looking for a role with a math and physics focus. Versed in GNC, stereo vision, missile design, data analysis, airfoil analysis, spacecraft electric propulsion, hardware testing, and systems engineering. Willing travel and relocate.

EXPERIENCE

Hardware Test Engineer, *Project Kuiper, Amazon*   **2021-present**

- Owned environmental testing of the electric thruster power and control board. This involved designing, building, and running test sets which would touch flight hardware. The test sets included typical electronics testing equipment (power supplies, SMUs, electronic loads), a custom interface PCBA, and custom harnessing.
- Wrote automation code for the test racks. This included python software development of test equipment drivers and a framework for testing. Data from both the unit under test and the test equipment was collected and analyzed against performance requirements. Data and results were saved locally as well as streamed to AWS for real-time monitoring.
- Defined requirements for test systems. This involved reviewing the satellite design requirements to determine how each could be verified. If they are verified via test, then the specific test campaign and performance requirements were determined. These performance requirements fed into the design of the test sets.

GNC Engineer, *Sandia National Laboratories*   **2020-2021**

- Augmented a hypersonic missile simulator with different guidance laws. I implemented novel guidance law algorithms from research papers into a missile simulator. The simulator evaluated performance of different GNC methods using Monte Carlo analysis.
- Developed a digital twin for a hypersonic missile. I modeled sub-components in Simulink then ran them on combination HWIL/SWIL test racks. The digital twin was modularized so that physical avionics components could be mixed with simulation hardware for rapid development and testing.
- Tested fin and actuator sub-assemblies. I wrote the test plan, ran the tests, and analyzed the results. This testing involved large stores of mechanical and electrical energy therefore I developed safety procedures for the equipment.

Aerospace Engineer, *General Atomics*   **2018-2020**

- Created a 3D tracking system using stereo vision. The system was designed for tracking railgun projectiles during flight and shrapnel during dispense. I learned about image analysis, high speed cameras, IR cameras, and lensing.
- Analyzed radar performance against GPS data from UAVs. I flew UAVs equipped with RTK GPS receivers downrange of various radar systems. I compared the radar data to the UAV truth data to evaluate accuracy.
- Scanned the railgun bore to check for wear and depositions. A laser sheet scanner captured pictures inside the bore. I created a program to turn these pictures into a 3D representation. This program could also compare different

scans to see how the shape changed over time.
- Automated imperfection identification for electric motor production. Photos were taken of electric motors during production. I automated stitching together the photos and classifying the imperfections. If the quantity or size of imperfections was too large, then production would be stopped in order to manually fix the imperfections.
- Created a thermal fluid simulator of a liquid-cooled thermal management system for a high-powered laser system. The simulator could analyze different pipe layouts, working fluids, and heat exchangers to determine max running time and margin. It could also determine pipe layout susceptibility to flow disturbances.
- Formulated multiple roll control methods for the next-gen interceptor. I modeled PTOC and SMC methods and compared their performance against typical missile PID roll control.
- Evaluated multiple hydrofoil designs for submarine concept. Multiple designs were analyzed using CFD. I used the results to determine possible mission profiles. I also compared performance against scale to estimate vehicle size given operating requirements.

Researcher and TA, *University of Illinois*   **2015-2018**
- TA for the spacecraft electric propulsion class. This class covered plasma physics and multiple thruster architectures including Hall, gridded ion, pulsed plasma, MPD, arcjet, and resistojet.
- Research assistant in the electric propulsion lab. I worked on the Helicon Injected Inertial Plasma Electrostatic Rocket (HIIPER) concept, a fusor with an asymmetrical grid fed with plasma from a helicon. I built a new helicon, designed thrust measurement equipment, and operated the thruster. Along the way, I learned about plasma modeling, laser interferometry, RF power, and vacuum equipment.
  - arc.aiaa.org/doi/abs/10.2514/6.2017-4629
- Research assistant in the Center for Plasma-Material Interactions "fusion" lab. I worked on the Divertor Edge and Vapor shielding eXperiment (DEVeX), tokamak, and supported other projects around the lab. I learned about plasma deposition, high voltage electronics, and schlieren imaging.
  - nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202016/fec2016-preprints/preprint0582.pdf

Structural Engineer and Team Lead, *University of Illinois*   **2016-2017**
- Lead my team to 3rd place in the AIAA Manned Mars Mission design competition. This doubled as my senior design project with a focus on systems engineering and trade studies. As team lead I managed tasks, organized reports, lead presentations, and held team events. I was also responsible for the structural subsystem including sizing, micrometeorite shielding, and radiation protection.

Kyle Stanevich

kylestanevich@gmail.com   kylestanevich.github.io   (815) 895-1098

Engineer and Business Associate, *Empod*   **2013-2017**
- Helped with engineering and business tasks including modeling in CAD, rapid prototyping using 3D printers, adding entries to IMDS, and communicating with manufacturing teams in China.

Design Engineering Intern, *Autosplice*   **2014**
- Worked with the connector design team. I tested compliant eye of the needle pins against electrical, mechanical, and thermal specifications. I also took cross sections of the pins before and after insertion.

EDUCATION

University of Illinois at Urbana-Champaign   **GPA: 4.00**   **2018**
Master of Science, Aerospace Engineering
Electric propulsion, combustion, distributed and satellite control systems

University of Illinois at Urbana-Champaign   **GPA: 3.97**   **2017**
Bachelor of Science, Aerospace Engineering
Control systems, CFD, systems engineering, UAVs, thermodynamics

SKILLS & LANGUAGES
- **Software:** SolidWorks, Fluent, NX, Mathematica, Comsol, Abaqus
- **Programming:** Matlab, Simulink, Python, OpenCV, C++, SQL
- **Other:** Linux, Windows, Git, SVN, Jira, Confluence

ACTIVITIES
- **Boy Scouts** – Eagle Scout, camping, fishing, cycling
- **Baja SAE** – space frame design
- **Hobby electronics** – Raspberry Pi, tesla coil, Coffee-Copter