Mark Agate

SUMMARY:

GNC/Flight Test Engineer with four years of flight test experience and a master's degree in Aerospace Engineering focusing on wind tunnel and flight testing of experimental designs. Conducted flight test projects in government, academia, and private industry. Highly proficient in data analysis using Python and MATLAB. Seven publications including one journal and six conference papers on fluid-structure interaction.

EXPERIENCE:

August 2020 – Current: *GNC Engineer* at L3Harris

- Developed linear analysis tools to improve autopilot controller (MATLAB/Simulink)
- Wrote and simulated improved autopilot flight code in C
- Performed statistical regressions on 5 years of flight data to rank severity of flight anomalies
- Contributed to full pipeline development (hypothesis/build/regression testing/integration)
- Presented return to flight recommendations to director level management (MATLAB/Powerpoint)

June 2019 – August 2020: *Flight Test Engineer* at Kitty Hawk

- Remote Pilot in Command of Heaviside and 3-person test team
- Mentored team members on software usage and remote piloting (Linux/Python)
- Performed analysis on flight anomalies using Python (Pandas/Numpy/Bokeh/Seaborn)
- Created PostgreSQL database for flight data
- Contributed to flight software development (Python/Haskell)
- Promoted within eight months of start date

August 2015 – June 2019: *Graduate Research Assistant* at The University of Arizona

- Test manager (Part 107) for Cat II UAS (R/C)
- Conducted wind tunnel experiments for fluid-structure interaction (Solidworks, MATLAB)
- Performed 2-dimensional aerodynamic analysis on fluid-structure interaction
- Collaborated with Computational Fluid Dynamics groups
- Managed budget of $128,000 for experimental equipment

January 2016 – October 2018: *Pathways Intern Employment* at NASA Langley and Johnson Space Center

- Designed telemetry for Cat II vertical take-off and landing UAS (Greased Lightning)
- Range Safety Officer Trainee to supervise flight tests and test readiness reviews
- Created interface control document for payload integration (Viking 400)
- Improved visual odometry by implementing GNC algorithms using MATLAB (Orion)
- Created a software program for on-orbit camera calibration using MATLAB (Orion)

AWARDS and CERTIFICATIONS

- Private Pilot Certificate (instrument; high-performance, tailwheel, aerobatics; glider; remote pilot)
- Pi Kappa Phi Thirty Under 30

EDUCATION:

University of Arizona
Master of Science Aerospace Engineering, December 2018

- 4.00 GPA
- Most Outstanding Graduate Student, Aerospace and Mechanical Engineering
- National Defense Science and Engineering Graduate Fellowship

University of Miami
Bachelor of Science Aerospace Engineering, May 2014

- 3.89 GPA
- Magna Cum Laude
- Team Lead NASA Reduced Gravity Flight Program