# Mark Agate

SUMMARY:
Engineer with flight test, integration, and software experience. 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:
November 2021 – Current: *Flight Test Systems Engineer* at Kitty Hawk
- Developed, simulated, and hardware tested novel vehicle-to-vehicle deconfliction with Python
- Full pipeline development (build, CI/CD, test, and deployment) of vehicle-to-vehicle deconfliction stack
- Supported vehicle integration and test of novel vehicle designs
- Created and analyzed flight test plans for small (5 kg) and large (300 kg) eVTOL designs

August 2020 – October 2021: *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/AB testing/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
- Analyzed and presented statistical regressions of 3 years of wind tunnel data (MATLAB)
- Conducted wind tunnel experiments for fluid-structure interaction (Solidworks, MATLAB)
- Performed 2-dimensional aerodynamic analysis on fluid-structure interaction
- Created PostgreSQL database for wind tunnel experiments
- Managed budget of $128,000 for experimental equipment

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