

Logan Halstrom

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EDUCATION

- **University of California, Davis** **Davis, CA**
Ph.D. Mechanical and Aerospace Engineering (GPA: 3.86) *Sep 2013 – Sep 2020*
 - Thesis: Computational Fluid Dynamics Simulation and Validation of Parachute Pendulum Motion
 - Advisor: Dr. Stephen K. Robinson
 - B.S. Aerospace Engineering and B.S. Mechanical Engineering* (GPA: 3.72) *Jun 2013*
 - Graduated with College Honors
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EXPERIENCE

- **Johnson Space Center, National Aeronautics and Space Administration** **Houston, TX**
NASA Pathways Intern, Applied Aeroscience and CFD Branch (EG3) *Jun 2014 – Present*
 - **Responsibilities:**
 - Designed and analyzed crewed spacecraft using Computational Fluid Dynamics simulation techniques
 - Created computational grids for modeling complex geometries and aerodynamic phenomena
 - Generated informative visual representations and animations of aerodynamic flow solutions
 - **CFD Simulation and Analysis Projects:**
 - Simulated oscillatory motion and aerodynamics of crew reentry vehicle parachutes
 - Simulated dynamic loading of wind tunnel walls due to blockage from moving parachute
 - Simulated crew capsule separation during launch abort and analyzed unsteady proximity aerodynamics
 - **Aerodynamics Projects:**
 - Developed a genetic algorithm for optimizing the Orion Flush Air Data System (FADS) sensor array
 - Developed a general-use FADS trajectory reconstruction algorithm
 - Performed transonic stability analysis for RED-Data2 re-entry heating probe
 - **Supervisors:** Ben Kirk, Steve Labbe
- USRA Intern, Aircraft Operations Division* (CC3) *Jul 2013 – Sep 2013*
 - **Responsibilities:**
 - Developed and executed flight experiments
 - Managed aircraft operations logistics and scheduling
 - Gained and maintained familiarity with aircraft and piloting systems
 - **Projects:**
 - Designed and conducted a pitot-static calibration flight test for the WB-57 aircraft
 - Performed experimental validation of GPS ground speed based pitot-static calibration technique
 - Assisted with Reduced Gravity Operations safety inspections
 - **Supervisors:** Son Nguyen, Gregory Johnson
- **University of California, Davis** **Davis, CA**
Graduate Student Researcher, Center for Human/Robotics/Vehicle Integration and Performance *Sep 2013 – Present*
 - **Research:**
 - Performed CFD simulations of rigid-geometry parachute motion and resulting unsteady aerodynamics
 - Validated and calibrated simulations by comparison to wind tunnel test
 - Leveraged simulation for insight into root cause of dynamic instability of fully-deployed parachutes
 - **Principal Investigator:** Dr. Stephen K. Robinson
- Teaching Assistant, Department of Mechanical and Aerospace Engineering* *Sep 2013 – Present*

■ **Responsibilities:**

- Updated coursework to reflect modern industry concepts and techniques
- Held weekly lectures and office hours and fielded student questions about subject matter
- Graded exams and project reports and managed special circumstances for students

■ **Courses:**

- *Applied Aerodynamics*: Compressible/Transonic flow, viscous effects and boundary layer theory, finite wings, aircraft equilibrium, panel methods
- *Computational Aerodynamics*: 2D finite difference Euler methods, transonic small-disturbance theory
- *Stability and Control of Aerospace Vehicles*: State-space representation, longitudinal and lateral stability
- *Rocket Propulsion*: Fluid and thermodynamics of liquid and solid rocket engines

■ **Supervisors:** Dr. Stephen K. Robinson, Dr. Mohamed Hafez, Dr. Ron Hess, and Dr. Jean-Pierre Delplanque

SKILLS

Core Languages: Python, Javascript

Additional Languages: C#, FORTRAN, C++, MATLAB, Simulink, L^AT_EX, jQuery, Ruby on Rails, HTML5, CSS3

Development Environments: Linux, macOS, Windows, Android, iOS

[CV created on 04-14-2020]