

# 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) *Sep 2008 – 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)* *Jan 2014 – Present*
  - **Responsibilities:**
    - Designed and analyzed crewed spacecraft using Computational Fluid Dynamics simulation techniques
    - Created computational grids for modeling complex geometries and performed sensitivity studies
    - Generated informative visual representations and animations of aerodynamic flow solutions
  - **CFD Simulation and Analysis Projects:**
    - Oscillatory motion and unsteady aerodynamics of crew reentry vehicle parachutes
    - Dynamic loading and failure of wind tunnel wall panels due to blockage from moving parachute
    - Crew capsule separation during launch abort and analysis of unsteady proximity aerodynamics
    - Transonic aerodynamic stability analysis for atmospheric reentry data probe spacecraft
  - **Aerodynamics Design Products:**
    - Parallelized genetic algorithm for design optimization of the Orion Flush Air Data System (FADS) sensor array
    - General-use FADS trajectory reconstruction algorithm to facilitate team collaboration
  - **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 applied knowledge of aeronautical flight 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*
  - Performed multi-disciplinary CFD simulations of rigid-geometry parachute motion
  - Validated and calibrated simulations by comparison to wind tunnel test
  - Analyzed results 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:**
    - Created senior-level course materials to teach 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 Taught:**

- *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

## PROFESSIONAL AFFILIATIONS & ACTIVITIES

- **American Institute of Aeronautics and Astronautics**, UC Davis Chapter **Davis, CA**  
*Member* *2011 – Present*
- **Educational Outreach**, UC Davis **Davis, CA**  
*HRVIP Coordinator*, UC Davis Picnic Day *2014 – 2019*
  - Organized and coordinated Center for Human/Robotics/Vehicle Integration and Performance outreach event
  - Provided children and young adults with the opportunity to learn about piloting on flight simulators
- Volunteer*, University Airport Open House *2014 – 2017*
  - Volunteered to demonstrate flight simulators and aerospace displays to the public
- **MAE Aerosciences Journal Club**, UC Davis **Davis, CA**  
*Co-Founder and Chair* *2016 – 2018*
- **Advanced Modeling Aeronautics Team**, UC Davis **Davis, CA**  
*Team Captain* *2012 – 2013*
  - Designed and manufactured an Uncrewed Aerial Vehicle (UAV) optimized for specific mission requirements
  - Managed 20 team members throughout all stages of the design process
  - Allocated the design process into separate aircraft components delegated to leaders of smaller sub-teams
- Team Member* *2011 – 2012*

## SKILLS

**Documentation/Presentation:** L<sup>A</sup>T<sub>E</sub>X, Beamer, Microsoft Word, Power Point, Excel, G Suite

**Programming:** Python, MATLAB, FORTRAN, C++, MPI/OpenMP, Linux, macOS, Windows

**Computational Fluid Dynamics:** OVERFLOW, OpenFOAM, Chimera Grid Tools, Pointwise, Tecplot 360, ParaView

## AWARDS

- **Recognition of Excellence**, Aeroscience and Flight Mechanics Division, NASA Johnson Space Center *2019*  
*For accomplishments and technical contributions to the CCP program*
- **Mechanical and Aerospace Engineering Departmental Fellowship**, UC Davis *2019*  
*In recognition of meritorious accomplishments*
- **Joseph L. Steger Fellowship**, Joseph L. Steger Foundation *2016 – 2018*  
*Fellowship awarded in recognition of outstanding academic record and excellent work in the area of Computational Fluid Dynamics*
- **Group Achievement Award**, National Aeronautics and Space Administration *2017*  
*For development of an advanced heatshield flight experiment as part of the Xby2016 effort helping extend the knowledge of aerothermal and TPS modeling through flight*
- **Outstanding Achievement**, NASA Johnson Space Center Office of Education *2015*  
*For outstanding contributions as an intern for the Johnson Space Center*
- **Service Award**, UC Davis Department of Mechanical Engineering *2013*  
*For service as the captain of the Advanced Modeling Aeronautics Team*

## LANGUAGES

**English:** Native language

**Spanish:** Basic (speaking, reading, writing)

**Russian:** Basic (speaking, reading, writing)

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## INTERESTS

- Backpacking, long-distance running, cooking, gardening, digital photography, acoustic guitar, world travel

[CV created on 05-06-2020]