

# 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

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## PROFESSIONAL AFFILIATIONS & ACTIVITIES

- **MAE Aerospace Journal Club**, UC Davis **Davis, CA**  
2016 – 2018  
*Co-Founder and Chair*
    - Co-created departmental journal club for discussing scientific papers in the aerospace field
    - Scheduled meetings and delegated the responsibility of selecting a topic paper to individual members
  - **American Institute of Aeronautics and Astronautics**, UC Davis Chapter **Davis, CA**  
2011 – Present  
*Member*
  - **Advanced Modeling Aeronautics Team**, UC Davis **Davis, CA**  
2012 – 2013  
*Captain*
    - 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

*Member* 2011 – 2012
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## 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++, Linux, MPI/OpenMP

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

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## AWARDS

- **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*
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## LANGUAGES

**English:** Native language

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

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

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## INTERESTS

- Backpacking, running, cooking, gardening, digital photography, acoustic guitar, aviation

[CV created on 04-14-2020]