

Logan Halstrom

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EDUCATION

- **University of California, Davis**

Ph.D. Mechanical and Aerospace Engineering (GPA: 3.86)

Davis, CA

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**

NASA Pathways Intern, Applied Aeroscience and CFD Branch (EG3)

Houston, TX

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

- **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
- 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

- **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**

Graduate Student Researcher, Center for Human/Robotics/Vehicle Integration and Performance

Davis, CA

Sep 2013 – Present

- 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

PROFESSIONAL AFFILIATIONS & ACTIVITIES

- **MAE Aerosciences Journal Club**, UC Davis **Davis, CA**
2016 – 2018
Co-Founder and Chair
- **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

SKILLS

Documentation/Presentation: L^AT_EX, 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

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

LANGUAGES

English: Native language

Spanish: Basic (speaking, reading, writing)

Russian: Basic (speaking, reading, writing)

INTERESTS

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

[CV created on 04-14-2020]