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

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: LaTeX, 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

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

[*CV created on 04-16-2020*]