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

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

PROFESSIONAL AFFILIATIONS & ACTIVITIES

- **MAE Aerosciences Journal Club**, UC Davis **Davis, CA**
  Co-Founder and Chair *2016 – 2018*
  - 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 on a rotating basis
- **American Institute of Aeronautics and Astronautics**, UC Davis Chapter **Davis, CA**
  Member *2011 – Present*
- **Advanced Modeling Aeronautics Team**, UC Davis **Davis, CA**
  Captain *2012 – 2013*
  - Designed and manufactured a model aircraft optimized for the specific mission requirements of delivering humanitarian aid
  - Managed 20 team members throughout all stages of the design process
  - Allocated the design process into separate aircraft components that were delegated to leaders of smaller sub-teams

  Member *2011 – 2012*

SKILLS

Documentation/Presentation: LaTeX, 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 aerotherma
- **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

- **Regents' Scholar**, University of California 2011 – 2013
  The most prestigious award on the UC Davis campus given to students entering with a GPA higher than 3.80
- **Forrest Mitchell Award**, Northern California Scholarship Federation 2012
  For maintaining the highest GPA of any Junior scholarship recipient

[*CV created on 04-14-2020*]