Logan Halstrom

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EDUCATION

University of California, Davis

- Ph.D. Candidate in Mechanical and Aerospace Engineering (GPA: 3.86) Sep 2013 – Sep 2020
  Thesis: Computational Fluid Dynamics Simulation and Validation of Parachute Pendulum Motion
  - CFD simulation of rigid-geometry parachute motion and resulting unsteady aerodynamics
  - Validation and calibration by comparison to wind tunnel test
  - Insight into root cause of dynamic instability of fully-deployed parachutes

  Advisor: Dr. Stephen Robinson
- Aerospace Engineering, B.S. and Mechanical Engineering, B.S. (GPA: 3.72) Jun 2013
  - Graduated with College Honors

EXPERIENCE

Johnson Space Center, National Aeronautics and Space Administration

- Pathways Intern, Applied Aeroscience and CFD Branch (EG3) Jun 2014 – Present
  - 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
  - Performed transonic stability analysis for RED-Data2 re-entry heating probe

  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

  Supervisors: Steve Labbe, Mark Hammerschmidt, and Ben Kirk
- USRA Intern, Aircraft Operations Division (CC3) Jul 2013 – Sep 2013
  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: Gregory Johnson and Jack Woods

University of California, Davis

- Teaching Assistant, Department of Mechanical and Aerospace Engineering Sep 2013 – Present
  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 Robinson, Dr. Jean-Pierre Delplanque, Dr. Ron Hess, and Dr. Mohamed Hafez

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Aerosciences Journal Club, UC Davis

- Co-founder 2016 – 2018

American Institute of Aeronautics and Astronautics, UC Davis Chapter

- Member 2011 – Present

Advanced Modeling Aeronautics Team, UC Davis

- Captain 2012 – 2013
  - Designed and manufactured a model aircraft optimized for specific mission requirements
  - Managed team members throughout all stages of the design process
  - Competed and placed 2nd in the SAE 2013 Aero Design West Competition
- Member 2011 – 2012

SKILLS

Documentation/Presentation
- LaTeX, Beamer, Microsoft Word, Power Point

Computing
- Linux, Python, MATLAB, FORTRAN, C++, High Performance Computing, MPI/OpenMP

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

AWARDS & SCHOLARSHIPS

- 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
- 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

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*]