Samuel W. Albert, PhD

Washington, DC | samuelalbert21@gmail.com | (615) 260-6341 | samwalbert | 0000-0002-7013-7649

active Top Secret security clearance

Education

PhD **University of Colorado Boulder**, Aerospace Engineering Sciences — Boulder, CO
Advisor: Dr. Hanspeter Schaub, Dr. Bobby Braun — May 2020 – Sept 2023

- *Aerocapture, Entry, and Co-Delivery in Uncertain Planetary Atmospheres*
- NASA Space Technology Research Fellow
- Five first-author papers in peer-reviewed journals
- John A. Vise Award

MS **University of Colorado Boulder**, Aerospace Engineering Sciences — Boulder, CO
Aug 2018 – May 2020

- Graduate Certificate in Astrodynamics and Satellite Navigation Systems
- Matthew Isakowitz Fellow

BS **Purdue University**, Aeronautical and Astronautical Engineering — West Lafayette, IN
Honors College Graduate — Aug 2014 – May 2018

- Minor: Global Engineering Studies
- Exchange semester at Universidad de Carlos III, Madrid, Spain
- Stamps Scholar (full-ride scholarship)

Experience

Johns Hopkins University Applied Physics Laboratory, Senior Aerospace Engineer — Laurel, MD
Sept 2023 – present

- **Flight Performance Analyst on NASA Dragonfly Mobility Team** – perform Monte Carlo analyses, sensitivity studies, and flight envelope sweeps for rotorcraft on Titan
- **Co-PI of Research Grant with UMD** – lead team of 6 engineers in applying neural radiance field models to multi-spectral dynamic spacecraft imagery
- **Advanced Technology Applications** – astrodynamics, navigation, simulation, mission concept development for a variety of national security space missions/projects

NASA (multiple instances), Visiting Technologist; Summer Intern — Remote / Pasadena, CA
Research collaboration with NASA Langley and NASA JPL; Summer 2019 intern at JPL — various, 2019-2022

- Co-developed novel guidance algorithm for drag-modulated aerocapture and implemented in C++ for use in DSENDS aerocapture simulation
- Performed flight-mechanics analysis and trajectory design for the Small High Impact Energy Landing Device (SHIELD) concept
- Designed aerocapture trajectories for Uranus orbiter "A Team" pre-decadal study

Selected Publications

Dimensionality Reduction for Onboard Modeling of Uncertain Atmospheres 2025
Samuel W. Albert, Alireza Doostan, Hanspeter Schaub
10.2514/1.A35839 (AIAA Journal of Spacecraft and Rockets)

Energy Reference Guidance for Drag-Modulated Aerocapture 2023
Samuel W. Albert, Ethan Burnett, Hanspeter Schaub, P. Daniel Burkhart, Alex Austin
10.1016/j.asr.2023.09.034 (Advances in Space Research)

Relative Motion in the Velocity Frame for Atmospheric Entry Trajectories 2023
Samuel W. Albert, Hanspeter Schaub
10.2514/1.A35753 (AIAA Journal of Spacecraft and Rockets)