

# Samuel W. Albert, PhD

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## 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  
*Director's Special Achievement Award, Sept. 2025*    Sept 2023 – present
- Flight Performance Analyst on NASA Dragonfly Mobility Team – performs Monte Carlo analyses, sensitivity studies, and flight envelope sweeps for rotorcraft on Titan
  - Co-PI of 2-year joint IRAD with UMD – leads team in using neural radiance fields to render high-fidelity multi-spectral dynamic spacecraft scenes
  - Applies mission design, orbit estimation, and mission concept development to a variety of national security space missions/projects
- NASA**, Visiting Technologist/Intern (multiple)    Remote / Pasadena, CA  
 Research collaboration with NASA Langley and NASA JPL; Summer 2019 intern at JPL    2019-2022 (various)
- Co-developed novel guidance algorithm for drag-modulated aerocapture and implemented in C++ for use in DSEDS 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)