Skye Mceowen

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EDUCATION

University of Washington, W. E. Boeing Dept. of Aeronautics and Astronautics   **Fall 2018—Present**
> **PhD Student** studying optimal guidance of aerospace vehicles, expected 2025
> **Adviser:** Dr. Behçet Açıkmeşe

University of Southern California, Viterbi School of Engineering   **May 2018**
> **B.S. Astronautical Engineering**
> **Trustee Scholarship:** Full-tuition merit-based scholarship

WORK EXPERIENCE

UW Autonomous Controls Laboratory, *Researcher and Labspace Manager*   **Summer 2019—Present**
- Researching real-time convex-optimization based trajectory generation algorithms for hypersonic entry vehicles and aerial drones
- Responsible for implementing and developing flight and ground vehicle demonstrations for our group's optimal guidance and control algorithms, developing hardware and software, and managing lab operations
- Developing custom sequential convex programming path planning codebase in Matlab, C++ and Python

SpaceX, *Starship Guidance, Navigation and Control Intern*   **Fall 2024**
- Acted as flight 7 RE: completed stand-up/tuning of trajectory design, 6-DoF simulation and Monte Carlo
- Extended POST2 trajectory optimization framework for ship RTLS design to constrain vehicle temperatures

NASA Johnson Spaceflight Center, *EG5 Flight Mechanics and Trajectory Branch, Visiting Researcher*   **Spring 2024**
- Researched and developed hypersonic reentry trajectory optimization methods

SpaceX, *Starship Guidance, Navigation and Control Intern*   **Summer 2022**
- Performed analysis, modeling and development for flight vehicle on-orbit operations and hypersonic reentry

SpaceX, *Starship Guidance, Navigation and Control Intern*   **Summer 2021**
- Performed analysis, modeling, and simulation development in support of the vehicle's first orbital flight

SpaceX, *Satellite Guidance, Navigation and Control Intern*   **Summer 2020**
- Implemented a flight algorithm for a satellite, and ran simulations and Monte Carlos for verification events

Blue Origin, *Engine Avionics Intern*   **Summer 2018**
- Designed, implemented and tested a stability analysis tool for the BE-4 engine plant and controller
- Built and tested the Hardware-In-the-Loop (HIL) system for simulating the engine controller on the test stand

Blue Origin, *Avionics Hardware Engineering Intern*   **Summer 2017**
- Researched the near-field effects of welding on the avionics boxes to determine electromagnetic susceptibility to OTW, AC TIG and DC TIG welding on integrated launch vehicle

SpaceX, *Vehicle Engineering Intern*   **Summer 2016**
- Produced and delivered entire Thermal Control System side of qualification ground test for Crew Dragon
- Created extensive manufacturing instructions for orbital tube welded subassemblies of thermal fluid systems, delivered hardware for manned flight tests, and developed a custom thermal epoxy

HITCO Carbon Composites, *Process Engineering Intern*   **Summer 2015**
- Led and managed project to repair Boeing 787-9 carbon fiber floor beams

Planetary Resources Inc., *Part-Time Intern*   **Fall 2013 – Spring '14**
- Worked on *ARKYD* project to develop a microsatellite camera/screen payload

Champion & Associates Inc., *Intern*   **Summer 2013 – '14**
- Design improvement and assembly of electrical control panels for Boeing factory cranes

LEADERSHIP, EXTRACURRICULARS AND ACCOMPLISHMENTS

USC Rocket Propulsion Laboratory, *Lab Lead* & *Lead Avionics Engineer*   **Fall 2014 – Spring '18**
- Led the lab through the build of the first student rocket design to pass the Kármán line (Traveler III space shot)
- Responsible engineer for all vehicle avionics hardware and software, and lab electrical infrastructure
- Hands-on experience fabricating, machining, integrating and testing high-performance amateur rockets from scratch

Target Following via Computer Vision on Embedded Systems, *Senior Project*   **Fall 2017**
- Designed and built autonomous tracking system to control a camera via a Raspberry Pi to follow a target

- S. Mceowen, S. Uzun and B. Acikmese (2025). *Multi-phase Entry, Descent and Landing Guidance using Sequential Convex Programming.* In preparation for AIAA Journal of Guidance, Control and Dynamics (JGCD).
- S. Mceowen, D. Calderone and B. Acikmese (2025). *Auto-Tuned Primal-Dual Successive Convexification for Trajectory Optimization.* In preparation for IEEE Control Systems Letters (L-CSS).
- S. Mceowen, A. Mittal and B. Acikmese (2025). *Hypersonic Reentry with Continuous-Time Constraint Satisfaction.* In preparation for AIAA Journal of Guidance, Control and Dynamics (JGCD).
- S. Mceowen, A. Tiwary, J. S. K. Zhou, T. Kim, P. Elango and B. Acikmese (2025). *Auto-tuned Primal-dual Successive Convexification for Reentry Guidance.* Under review for AIAA Journal of Guidance, Control and Dynamics (JGCD).
- S. Mceowen, A. Tiwary, J. S. K. Zhou, T. Kim, P. Elango and B. Acikmese (2025). *Auto-tuned Primal-dual Successive Convexification for Hypersonic Reentry Guidance.* In 2025 AIAA Science and Technology Forum (SciTech).
  - **Winner of the Best Graduate Student Paper Competition for GNC.**
- S. Mceowen, A. Kamath, P. Elango, T. Kim, S. Buckner and B. Acikmese (2023). High-Accuracy 3-DoF Hypersonic Reentry Guidance via Sequential Convex Programming. In 2023 AIAA Science and Technology Forum (SciTech).
- A. Kamath, P. Elango, T. Kim, S. Mceowen, Y. Yu, J. Carson, M. Mesbahi, B. Acikmese (2023). Customized real-time first-order methods for onboard dual quaternion-based 6-DoF powered-descent guidance. In 2023 AIAA Science and Technology Forum (SciTech).
- A. Kamath, P. Elango, Y. Yu, S. Mceowen, G. Chari, J. Carson III, B. Açıkmeşe. Real-Time Sequential Conic Optimization for Multi-Phase Rocket Landing Guidance. In 2023 22nd IFAC World Congress.
- Y. Yu, S. Mceowen, and K. Nagpal (2022). Real-Time Quad-Rotor Trajectory Optimization using Time-Triggered Flight-Corridor Constraints. In preparation for AIAA Journal of Guidance, Control and Dynamics (JGCD).
- S. Mceowen, D. Sullivan, B. Chasnov, D. Calderone, M. Szmuk, O. Sheridan, and B. Acikmese (2022). Visual Modeling System for Optimization-Based Real-Time Trajectory Planning for Autonomous Aerial Drones. In 2022 IEEE Aerospace Conference (AeroConf).
- S. Mceowen, and B. Acikmese (2022). Hypersonic Entry Trajectory Optimization via Successive Convexification with Abstracted Control. In 2022 AIAA Science and Technology Forum (SciTech).
- M. Szmuk, D. Malyuta, T. Reynolds, M.S. Mceowen, and B. Acikmese (2019). Real-Time Quad-Rotor Path Planning Using Convex Optimization and Compound State-Triggered Constraints. In 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).

SKILLS

Software: Altium, NX, CATIA, SolidWorks, Creo, Git, C++, MATLAB, Simulink, Python, Julia
Practical: Machining on the mill and lathe, soldering, composite layups, orbital tube welding, wrangling Linux, testing