August 2022

Burton Yale, III

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EDUCATION

Master's of Science in Aerospace Engineering **August 2021 – May 2023**
The University of Texas at Austin
Emphasis: Orbital Mechanics | GPA: 3.72/4.00

Bachelor's of Science in Aerospace Engineering **Sep 2015 – May 2021**
California State Polytechnic University, Pomona
Graduated Magna Cum Laude with a GPA of 3.7/4.0

EXPERIENCE

Jet Propulsion Laboratory **Pasadena, CA** **Jun 2022 – Present**
Inner Planets Navigation Intern – Academic Part-Time (APX)
Assiting in navigation and operational orbit determination of Mars Reconnaissance Orbiter and Lunar Trailblazer.

University of Texas at Austin **Austin, TX** **Aug 2021 – May 2022**
Graduate Teaching Assistant
Taught lectures and graded exams for Differential Equations & Linear Alegbra, and Spacecraft Dynamics courses.

Jet Propulsion Laboratory **Pasadena, CA** **Jan 2021 – May 2021**
Outer Planets Mission Analysis Intern
Supported NEAScout mission design by enhancing broad search tool to find trajectories to Near-Earth Asteroids.

Cal Poly Pomona **Pomona, CA** **Feb 2019 – May 2021**
Research Assistant
In cooperation with NASA/JPL, redesigned user interface and experience for low-thrust trajectory optimizer MALTO.

Panasonic Avionics **Lake Forest, CA** **Jun 2019 – Aug 2019**
Certification Engineering Intern
Conducted Structural, Environmental, Leak, and Cooling tests, then summarizing results and identifying issues.

PUBLICATIONS

Yale, B., & Lantoine, G. (2021). Multi-Revolution Extension of Solar-Perturbed Moon-To-Moon Transfer Families, proceedings of *2021 Astrodynamics Specialist Conference*. AAS 21-581.

Abdolrahimi, S., **Yale, B.**, Welsher, J., Tzounis, C., Fofrich, J., Patel, R., Cabrera, J., Nakhjiri, N., Scott, D., & Johnson, A. (2020). Voyager 3: A Concept Mission to Interstellar Medium, submitted to *AIAA Journal of Spacecraft and Rockets*.

Yale, B., Patel, R., Cabrera, J., & Nakhjiri, N. (2020). Broad Trajectory Searches Using Monte Carlo Tree Search with the Inclusion of ΔVEGA Trajectories, proceedings of *2020 Astrodynamics Specialist Conference*. AAS 20-686.

PROJECTS

Orbit Determination of an Uncertain Earth-Orbiting Satellite **Jan 2022 – May 2022**
Determined dynamics and measurement model for satellite in Low-Earth orbit. Passed model through Extended Kalman Filter to determine state, properties, and covariance at delivery epoch. Report of results available here.

Investigation of Direct and Indirect Methods of Optimal Spacecraft Trajectories **Aug 2021 – Dec 2021**
Employed Automatic Differentiation in generalized optimizers for space trajectories with the ability to meet multiple types of objectives, under variable constraints. Summary presentation of results available here.

Voyager III JPL RFP Response – Capstone Spacecraft Design Project **Aug 2019 – May 2020**
For JPL student design proposal, lead team of 7 students over multiple design reviews with industry professionals and school-year long development. Winning 1^{st} place in design to send a spacecraft with scientific payload to a point outside the solar system at 550 AU to directly view exoplanet surfaces. Preliminary Design Proposal Link

PROFESSIONAL SKILLS

Coding Languages: MATLAB | Python (PyKep, SpiceyPy) | Julia | LaTeX | Bash | UNIX
Software Experience: MS Office | JPL MALTO | NAIF SPICE | Git | JIRA | SolidWorks | AGILE PLM