

EDUCATION

COLORADO BOULDER

MS in Aerospace Engineering
PhD student under Dr. Robert Braun
Thesis on Powered Descent Guidance

CORNELL UNIVERSITY

BS in Electrical and Computer
Engineering May 2018
Minor: Aerospace & Archaeology

COURSEWORK

Formation Flight
Adv Spacecraft Attitude Control
Vehicle Guidance Systems
Optimal Control and Estimation
Nonlinear Control Theory
Linear System Theory
Feedback Control Systems
Attitude Dynamics and Control
Spaceflight Mechanics
Analytical Astrodynamics
Spacecraft Tech. Systems Arch.
Mathematical Physics
Digital Communication
Embedded Systems
Microelectronics

AWARDS

2018: Matthew Isakowitz Fellow
2017: Winner Caltech Space
Challenge • MakeMIT Amazon Prize
2015: Hiram Percy Maxim Award
2014: Goldfarb Scholarship

HARDWARE

9 years of rapid prototyping with
digital embedded systems and
various peripherals

SOFTWARE

> 5000 lines:
Python • Matlab • \LaTeX • C/C++
< 5000 lines:
Verilog • HTML • Assembly
Design:
Simulink • Fusion360 • EAGLEcad •
Altium • Xpedition
Other:
SVN • Git

OTHER

Director Cornell Maker Lab:
Aug 2016 - May 2018
Extra Class Amateur Radio License

INDUSTRY

SPACEX | GNC ENGINEER FULL-TIME: HAWTHORNE, CA

- Guidance and control algorithm development for new satellite projects

SPACEX | ASSOCIATE ENGINEER - ADCS/GNC | SUMMER 2019: REDMOND, WA

- Actuator control board design and GNC models
- Ran environmental test campaign for spacecraft ADCS subsystem

SPACEX | ASSOCIATE ENGINEER - ADCS/GNC | SUMMER 2018: REDMOND, WA

- Designed/built/tested flight software and hardware for star trackers
- Wrote/tested online star tracker debris/moon filter algorithm with flight data

BLUE ORIGIN | AVIONICS INTERN | SUMMER 2017: KENT, WA

- SDR RF and attitude dynamics simulator hardware/software
- New Glenn vehicle S-band embedded firmware

URSA SPACE SYSTEMS | SYSTEMS ENGINEER | AUG 2016 – FEB 2017: ITHACA, NY

- Avionics architecture for a constellation of synthetic aperture radar imaging satellites: held power, communication, and ADCS budgets into PDR

SPACEX | AVIONICS INTERN | DRAGON AVIONICS SUMMER 2016: HAWTHORNE, CA

- Built/tested TDRS reradiation system for Dragon 1/v2 and other RF test devices
- Post-mission RF analysis scripting

SPACEX | LAUNCH INTERN | SUMMER 2015: SLC39A/40 CAPE CANAVERAL, FL

- Instrumentation, camera, fiber/pad comm systems for Falcon Heavy support.
Implemented lightning warning system for SpaceX sites, replacing NASA system.

CORNELL SPACE SYSTEM DESIGN STUDIO Aug 2014 – Nov 2017 | Ithaca, NY

- Avionics Lead on Artificial Gravity Cubesat under Dr Daniel Selva.
- Complete in-house avionics design to demonstrate controlled artificial gravity with a flexible tether.
- Avionics Lead on the Violet Nanosatellite Project for 2 years under Dr. Mason Peck.
- Held 3 Pre-Integration Reviews and 1 Pre-Ship Review with Air Force Research Lab
- Brought full system avionics system to functioning state to be shipped to AFRL
- Worked on hardware and firmware for power, ADCS, CDH, T&C, GPS, and sensors
- Performed Simulated Communications, Charge Cycle, Sensor-suite Checkouts, and full Flat-Sat testing

PERSONAL PROJECTS AND RESEARCH

PDP1 LANDER: ROCKET-POWERED LANDING GNC TEST PLATFORM. | '18 - PRESENT

6DOF SUCCESSIVE CONVEX OPTIMAL POWERED DESCENT GUIDANCE IMPLEMENTATION | '18

LQR + EKF CONTROL WITH OPTIMAL GUIDANCE FOR QUADROTORS | '18

3DOF CONVEX OPTIMAL ROCKET LANDING ALGORITHM IMPLEMENTATION | '17

FROM-SCRATCH MECHANICAL KEYBOARD WITH \LaTeX BINDINGS IN FIRMWARE | '18

LR101 LOX/RP1 ROCKET ENGINE RESTORATION | '18

3DOF STEWART MOTION PLATFORM HARDWARE AND FIRMWARE | '17

QUADROTOR FLIGHT COMPUTER WITH PID RATE CONTROL | '17

THIRD EYE: A COMPUTER-VISION TEXT-TO-SPEECH DEVICE | '17

INFRARED IMAGING AGRICULTURAL QUADROTOR | '15

LINEAR MAGNETIC ACCELERATOR, 1.1KJ AND 6.7KJ MODELS | '13-'14

PUBLICATIONS

JUN '17 – P. Lysandrou et al., Lunarport Concept - A Launch And Supply Station For Deep Space Missions, IAA Symposium, Torino, Italy (Conference)

APR '17 – P. Lysandrou et al., 2017 Caltech Space Challenge - Lunarport: Lunar Extraction for Extraterrestrial Prospecting, AIAA Space Forum 2017, Orlando, FL (Conference)