Fernando Palafox Escobedo

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EDUCATION

University of Texas at Austin

Ph.D Aerospace Engineering

Control and Learning for Autonomous Robotics (CLeAR) Lab — **Aug 2022 - Present**

University of Colorado Boulder

M.S. Aerospace Engineering — **May 2022**

Autonomous Systems, Artificial Intelligence, Estimation Theory

B.S. Aerospace Engineering — **May 2021**

Summa Cum Laude

TECHNICAL SKILLS

Statistical Estimation	Artificial Intelligence	Positioning, Navigation and Timing (PNT)	
Hybrid Systems	MATLAB	Julia	Git

ENGINEERING EXPERIENCE

RF and Satellite Navigation Lab — *University of Colorado Boulder*

Undergraduate Research Assistant — *May 2020 - May 2022*

- Integrated and tested a local land-based positioning system using software-defined radios (SDRs) transmitting in the 2.4 and 5.8 GHz ISM bands. Findings published and presented at ION GNSS+ 2021.
- Designed and implemented a navigation signal architecture that allows for data transmission at 250 kbps and relative range determination using code and carrier phase tracking techniques.
- Adapted a software-based GPS receiver for use with modernized Global Navigation Satellite Systems (GNSS) and Satellite-Based Augmentation Systems (SBAS) such as Galileo, GPS L1c and WAAS.

Autonomous Systems Coursework & Projects — *University of Colorado Boulder*

- Courses: Algorithmic Motion Planning, Decision Making under Uncertainty, Adv. State Estimation and Hybrid Systems
- Projects: Kinodynamic Goal-Bias RRT for a Self-Driving Car, Policy Generation for Wordle, Max. Likelihood Estimator for SNR, Safe Controls for Pacman using LTL Specifications

Positioning For Lunar Operations (P4LO) — *University of Colorado Boulder*

Electronics Lead — *August 2020 - May 2021*

- Developed a prototype network of SDRs transmitting in the 2.4 GHz ISM band as a foundation for LunaNet, a NASA-funded communications and navigation architecture for use in lunar operations.
- Designed, integrated and tested a network of SDRs to transmit and process GPS-inspired navigation signals using CDMA modulation techniques.
- Individual Award for Best Technical Leadership in Electronics, Team Award for Best Verification and Validation

LEADERSHIP EXPERIENCE

Director of Public Relations for Distinguished Speakers Board (DSB) — *September 2019 - May 2020*

- DSB is a student-led organization at CU Boulder that invites speakers to campus with the purpose of cultivating diversity of thought and fostering meaningful discussions within the student body.
- Developed and executed a marketing and public relations plan for speaker events. Delegated individual marketing tasks to 14 board members.

Mars Desert Research Station Stay — *May 2019*

- Selected as part of a group of 20 students to spend a week in The Mars Society's Mars Desert Research Station in Utah as part of a month-long course on medicine in space and surface environments.
- Incident commander on simulated search and rescue operations on Mars. Established group leaders and tasks, presided over general rescue strategy and logistics and directed the team response to any emergent situations.

ADDITIONAL EXPERIENCE

Cycling Photography Mountaineering