

# Basil Aranda



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[thymetravel.github.io/](https://thymetravel.github.io/)

## EDUCATION

### California State Polytechnic University, Pomona— *B.S. Aerospace Engineering; Astronomy Minor*

August 2020 - Present

- Expected Graduation May 2023
- 3.74 GPA
  - American Institute of Aeronautics and Astronautics
  - American Society of Mechanical Engineers
  - Institution of Mechanical Engineers
  - American Mathematical Society

## EXPERIENCE

### NASA Armstrong Flight Research Center RVLTL — Intern

January 2022 - Present (20 Hours Per Week)

- Revolutionary Vertical Lift Technology is the future of personal travel free of congested roadways.
- Modeled flight controllers and high power motors using control system fundamentals and novel research
- Worked with and designed PWM based motors with variable disturbances; model will be used between NASA centers
- Facilitated Intra-center communication between interns

### CubeSat Technology Exploration Project, CPP & NASA JPL — Electrical Team

February 2021 - Present (5 Hours Per Week)

- Designed and integrated electrical systems to test novel technologies
- Coalesced separate proprietary COTS platforms for successful incorporation
- Created Data Acquisition Systems to interface with commonly available microprocessors and microcontrollers
- Lead on circuit analysis and electromechanical integration

### NASA Stennis Office of STEM Engagement — Intern

August 2021 - December 2021 (20 Hours Per Week)

- Designed on-site experience for future NASA NCAS Scholars
- Project will be adopted at other NASA Centers for their specific NCAS programs. Project is modular and accounts for Center focus
- Created and designed a portable weather station with common microcontrollers and sensors

## SKILLS

Systems Engineering  
Willingness to Learn  
Avionics Experience  
Rocket Propulsion Experience  
Adept with C++, Python.  
Electrical wiring, soldering, and analysis expertise  
Public Speaking  
Solidworks  
Autodesk Suite  
Proficient in Excel  
Adaptable & Team-focused

## AWARDS

Associates Degrees in  
Engineering, Mathematics,  
Physics, and Art

Magna Cum Laude, Santa  
Clarita Community College  
District

California Space Grant  
Consortium

NASA NCAS Winner  
SCCDD Resolution  
MESA Director's Award  
US Presidential Volunteer  
Award

## LANGUAGES

C++  
Python  
Java  
MATLAB  
SolidWorks  
AutoCad  
Arduino IDE

Intermediate Spanish  
Intermediate Filipino

## **NASA RockSat-X, Santa Clarita— *Electrical Lead***

November 2018 - December 2019 (5 Hours Per Week)

- Launched a cubesat to apogee to test feasibility of auto-rotation for reentry
- Self-taught PCB design, COTS integration, and electrical analysis
- Presented project at Caltech's Infrared Processing and Analysis Center

## **Santa Clarita Community College District Student Trustee, Santa Clarita**

June 2019 - June 2020 (20 Hours Per Week)

- Elected to represent 30,000 students as the sole student representative on the SCCCD Board of Trustees
- Introduced sweeping legislation towards environmental sustainability
- Orchestrated & led student marches and demonstrations for justice, accountability, and progress

## **Mathematics Engineering Science Achievement, Santa Clarita — *Math, Physics, Engineering Tutor***

January 2019 - August 2020 (10 Hours Per Week)

- Instructed Engineering, Calculus, and Mathematics to STEM students requiring extra guidance
- Mastered the academic theory behind these subjects
- Gained invaluable interpersonal experience

## **College of the Canyons Information Technology, Santa Clarita — *Student Employee***

April 2019 - June 2019 (25 Hours Per Week)

- Created Javascript and HTML Code to provide Americans with Disabilities Act compliance to College of the Canyons main website
- Transferred and converted documentation
- Adhered to strict ADA requirements

## **REFERENCES**

### **Professional**

- Stacy Schmidt, NASA NCAS Coordinator Southeast Region
  - stacy.schmidt@nasa.gov
- Peter M. Suh, NASA Armstrong Control Systems Engineer
  - peter.m.suh@nasa.gov
- Kelly McCarthy, NASA Education Program Specialist
  - kelly.mccarthy@nasa.gov

### **Educational**

- David Martinez, College of the Canyons Engineering Department Chair
  - david.martinez@canyons.edu
- Navid Nakhjiri, Cal Poly Pomona Aerospace Engineering Professor
  - nnakhjiri@cpp.edu

## **CURRICULUM VITAE**

Avionics  
Structures  
Simulation Modeling  
Low Speed Fluid Dynamics  
High Speed Fluid Dynamics  
Thermodynamics  
Wind Tunnel Testing  
Control Systems  
Orbital Mechanics  
Vibrations  
Astronautics  
Ethical Engineering

Special Relativity  
Quantum Physics  
Observational Astronomy  
Electrodynamics  
Electromagnetism  
Kinematics  
Wave, Heat, and Optics

## **QUALIFICATIONS**

High level grasp of engineering concepts specifically in Avionics and Control Systems

Experienced with professional lab settings, research, and grant proposal writing

Strong and consistent academic performance

## **SELECTED PROJECTS**

Computational Fluid Dynamics

Stochastic Computational Math Research

High Gain Directional RF Remote Transmitter

Algorithm-Beating Maze Generator