Karl Anthony Parks
I build rockets, robots, & programs.

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SUMMARY OF QUALIFICATIONS
- Passion for developing and debugging avionics systems for space exploration and innovation.
- Professional experience building complex mechanical, electrical, and software systems for the real world.
- Mechanical: CAD, FEA, and mesh modeling experience with PTC Creo/Simulate, SolidWorks, and Blender.
- Electrical: Hands-on electrical experience with PCBs/KiCad, soldering, multimeters, oscilloscopes, and micro ohm meters.
- Software: MATLAB, Python, C/C++ (Bazel), Typescript/Javascript + React/Express, Kotlin/Java (Gradle), and LabView.
- Fluids: Significant experience with LOX, LNG, N2O, HTPB, LN2, Nitrogen, Helium, and pneumatic plumbing systems.
- Communications: gRPC, HTTP, Websocket, UDP/TCP, CAN, Modbus, Ethernet, Wireless, LoRa, IPv4, Wireshark.
- General: Direct communicator, tinkerer, handy, prefer working smarter not harder, compassionate, organized.

EDUCATION
San Diego State University (SDSU), CA   December 2019
Bachelor of Science in Aerospace Engineering, Minor in Computer Science   GPA: 3.5/4.0

RELEVANT EXPERIENCE
Boston Dynamics, Waltham MA (Mar 2020 - Present)
(Creates Robots with Advanced Mobility, Dexterity, and Intelligence including Spot®, Atlas, and Stretch)
- Software Engineer (Mar 2022 - Present)
    - Lead feature development of live telemetry display for LEL/hazardous gas and gamma radiation sensor data.
    - Developed map-based software applications that enhanced deployment efficiency and situational awareness.
    - Enhanced autonomous radiometric thermal inspection process that is used in all high-value engagements.
- Field Application Engineer (Mar 2020 - Mar 2022)
    - Supported customers in deploying Spot in Nuclear, Aerospace, and Construction industries.
    - Collected, reviewed, and delivered actionable feedback to improve Spot's abilities in various environments ranging from low-level locomotion to advanced autonomous behaviors.
    - Developed software and hardware for radiation meters, GNSS, LiDAR, 360 cameras, and compute platforms.

Parabilis Space Technologies, San Marcos CA (Jun 2018 - Feb 2020)
(Designs, Develops, Tests, and Flies Affordable Propulsion, Launch Vehicles, and Spacecraft/Small Satellite Solutions)
- Engineering Intern
    - Built test site electrical and networking infrastructure to remotely operate an electro-pneumatic actuator.
    - Developed a National Instrument-based DAQ system for strain gauge measurement and data logging.
    - Created a throttleable valve with custom code for a high-torque servo motor and PID controller.
    - Gained experience with PTC Creo parts/assemblies/drawings by designing fluid fittings and structures.
    - Designed and constructed a new hybrid rocket motor test stand in less than 3 months.
    - Developed custom software for low-cost infrared thermal imaging FLIR camera for hot fire testing.

SDSU Rocket Project, CA (Aug 2015 - Feb 2020)
(Student Team that Designs, Fabricates, and Launches Liquid and Solid Rockets)
- Senior Engineer/Advisor (May 2018 - Feb 2020)
    - Launched record-breaking liquid bi-propellant LOX/LCH4 rocket to an altitude of 13,205 feet.
    - Mentored and led new engineers in the development of avionics and propulsion systems.
    - Organized and analyzed cryogenic, static hot fire, and launch data leading to an increased understanding of system performance and changes in design to improve launch success.
    - Tested regulators, actuators, fittings, solenoids, software, pressure transducers, and valves in various conditions.
- President/Project Manager (May 2017 - May 2018)
    - Directed the design, fabrication, and testing of a new LOX/LCH4 rocket engine for the FAR/Mars Launch Contest.
    - Oversaw and managed discussion of over 50 active members from multiple disciplines.
    - Built new systems and procedures that increased safety and improved documentation.
    - Participated in outreach events like the San Diego Maker Faire.
    - Managed one of the largest SDSU student organization budgets ($250,000+) and secured funding through grant applications and private donors.

KegRocket, USA (Nov 2021 - Present)
(Hobbyists attempting to build a Liquid Rocket made out of Beer kegs because it's Fun)
- Contributing remotely to software development and ground support equipment development. https://www.kegrocket.com/