



Joshua Pfeifer

Software, Systems, and Test Engineer

Skilled aerospace professional with extensive software, hardware, remote operations, and automation experience

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📍 Huntsville, AL

WORK EXPERIENCE

Embedded Software Engineer SAIC

08/2022 - Present

Develop/support test tools including HWILs and standalone test devices

- Use LabVIEW to develop and maintain large projects
- Network configuration and analysis using Wireshark and custom Lua parsers
- Real time hw including sbRIOs, PXIs
- Test procedure development
- Manage DevOps primarily w/ ADO and Git
- Design and 3D print (SLA) small components

Test Engineer Blue Origin

11/2021 - 08/2022

Renovation ops of NASA test stand 4670 for BE-3U and BE-4 testing

- Write work orders for ground systems demo, fab, cleaning, proof, install, and activation
- Lead teams to perform system activations
- Create and modify LabVIEW GUIs and controls
- Update P&IDs with AutoCAD
- Develop operational procedures and automation

Software Dev and Integration Engineer Jacobs Space Exploration Group

01/2020 - 11/2021

Supported SLS core stage avionics HWIL labs qualification testing

- Developed and ran test cases, fault insertions, poke files, and supporting scripts (BASH + Python)
- Maintained and updated configuration files, flight software
- Coordinated between test teams, analysis team, techs, and QA
- Performed data analysis using numerous tools/techniques
- Wrote, troubleshoot, and fixed Problem Reports
- Thoroughly documented all ops/procedures in order to eliminate tribal knowledge and assist training

SKILLS

Control Room Operator

Trainer

Supervisor

DevOps

LabVIEW CLAD

Troubleshooting

Hazardous Processes

Drone Pilot

Private Pilot + Instrument

Data Analysis

SCUBA Rescue

3D Modeling and Printing

EDUCATION

M.S. Systems Engineering

University of Houston - Clear Lake

08/2017 - 12/2019

4.0 GPA

B.S. Aeronautics

Embry-Riddle Aeronautical University

08/2010 - 08/2013

4.0 GPA

PERSONAL PROJECTS

Reverse Engineer Nav Unit Tester (2023)

- As responsible SW Engineer for standalone multi-unit test device, developed comprehensive test procedure for third party unit that was hitherto a "black box" with severely limited documentation
- Personally oversaw entire lifecycle: developed own requirements, reverse engineered process to obtain full unit functionality, developed and tested SW, sought and integrated customer feedback
- Analyzed integrated network captures using own designed and 3D printed connector among other COTS tools; determined needed DHCP server options, FTP server settings, ports, etc.

WORK EXPERIENCE

Test Operations Specialist SpaceX

02/2015 - 08/2017

Managed, operated, & automated ground systems for Merlin engine testing

- Wrote 6,000+ lines of code across multiple proprietary languages that have been used safely and reliably for thousands of engine tests
- Frequently modified LabVIEW GUIs, input calibrations, and performed checkouts to incorporate new instrumentation
- Managed requests, delivery, and usage of 1000s of gallons of propellant daily
- Used P&IDs and safety knowledge to write and process maintenance tickets
- Performed data review to identify problems and inefficiencies
- Trained 10+ operators/engineers on operator fundamentals, hotfire ops, etc.

Test Technician SpaceX

08/2013 - 02/2015

Maintenance support for Merlin engines, 2nd Stage, and 1st Stage testing

- Removed and installed engines and components
- Connected/operated high-pressure helium, nitrogen, and hydraulic systems
- Manufactured and installed AN high-pressure tubing
- Performed inspections with QA, including final before-flight close outs
- Completed twelve 1st Stage test campaigns w/ supervisory role in last three

F-16 Crew Chief United States Air Force

10/2006 - 10/2010

Hon. Dis., Secret SC, line number for SSgt in < 4 years

- Supervised and trained over 30 Airmen in maintenance tasks on multiple aircraft
- Final authority on serviceability of aircraft and documentation/accuracy of aircraft records
- Highest possible ratings in all areas on all Enlisted Performance Reports

PERSONAL PROJECTS

Facility Data COTS Analysis Tool Implementation (2021)

- Identified need for improved Facility Management System (FMS) data accessibility and implemented efficient solution
- Leveraged basic network knowledge, Python asynchronous code, custom libraries, BASH scripts, COTS plugins, and formal paperwork approval processes (SFCR, CCB)
- Configured COTS TICK stack on Linux dev server that subscribes to FMS data and enables quick cloud-based graphing plus easily-created custom email alerts

Systems Analysis and Modeling (2019)

- Created a suspension system interactive animation through JavaScript by applying Euler estimation of Lagrangian state equation per-frame:
<https://joshuapfeifer.com/gamesupport/project.html>

Liquid Oxygen Densification Automation (2016-2017)

- Pioneered automation of a new process that subcools liquid oxygen (lox) using a liquid nitrogen heat exchanger under vacuum
- Determined requirements, designed, implemented, and tested/verified programs to automatically perform numerous lox operations: subcooling to target temperature, loading test stands through any of 14 possible paths, unsupervised overnight tank swapping, etc.
- All programs were created in a modular format for optimum readability and ease of reusing common shared sequences

AWARDS

Extra Miler x2 (2021)

Jacobs Space Exploration Group

Performance Bonuses (2015 - 2017)

SpaceX

Maintenance Professional of the Year (2009)

Luke AFB

Air Force Achievement Medal (2008 - 2009)

Operation Iraqi Freedom