

Brian T. Jenkins

Software and DevOps Engineer

Contact

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About

I am a highly motivated software and devops engineer with 12 years of professional experience, starting in web development and moving into safety-critical aerospace applications. My current role is Principal Software Engineer at Sandel Avionics, where I am responsible for development of Flight Management System (FMS) application software. In addition, I'm responsible for software documentation, design and implementation of the navigation database, CI pipelines and build tools for all of our applications (both Linux and bare-metal embedded). Test-driven development is employed, and software is developed in accordance with RTCA DO-178C. Testing, internal tools and CI use C++, Python, and Git. I enjoy working in a team environment, am a quick and independent learner, and am passionate about mentoring and helping others.

Profiles

GitHub

[jenkinz](#)

Twitter

[jenkins_bt](#)

Work

Sandel Avionics

October 2015 — Present

Principal Software Engineer

<https://sandel.com>

Responsible for FMS application development including flight planning, navigation, configuration, and interfacing with the display UI components. The embedded Linux-based FMS apps are implemented in C++, deployed on an Intel i7-based SoM, and communicate with a distributed set of STM32 Arm Cortex-based microcontrollers (running ThreadX RTOS) handling safety-critical sensor and data processing tasks. MQTT is leveraged for telemetry and IPC.

Highlights

- Design and implement FMS application software handling flight planning, navigation, configuration, and display control tasks
- Design and implement navigation database (updatable over-the-air every 28 days)
- Responsible for automated test-driven development processes, including build and release system and CI infrastructure
- Document software APIs, development processes and procedures
- Participate in flight tests as an on-board flight test engineer

Govern For California

December 2012 — Present

IT and DevOps Consultant (part time)

<https://governforcalifornia.org>

GFC is a non-profit, non-partisan organization seeking to improve California state governance by becoming a counter to a myriad of special interest groups that have too much power over state legislators in the capitol today. Our strategy is to think and operate like a business and as a "special interest for the general interest." GFC's goal is to liberate state legislators from special interest influence to govern with a common sense, data-driven approach, and for the benefit of all California citizens.

Highlights

- Responsible for IT operations (part-time)
- Responsible for online donation interfaces and processing

General Atomics Aeronautical

January 2013 — October 2015

Software Engineer, System Safety

<https://ga-asi.com>

Responsible for software safety assessments on unmanned aircraft platforms to drive system and software safety requirements.

Highlights

- Lead completion of safety assessments for new UAV and ground station variants
- Developed an integrated model-based analysis technique for system/software safety analysis
- Interfaced directly with and presented to US government customers including the USAF and Army

vFlyer

August 2009 — June 2012

Software Engineer

<https://vflyer.com>

Developed Java-based web applications powering vFlyer's marketing platform and website builder.

Education

Santa Clara University

September 2005 — June 2009

Computer Engineering

Bachelor of Science (cum laude)

Publications

An Integrated Model-Based Approach to System Safety and Aircraft System Architecture Development

[October 2015](#)

Industry standards for aircraft development require consideration of system safety objectives during all phases of system architecture development and implementation. However, tools that have enabled systems engineers and software engineers to create high-fidelity models of system architectures currently don't address the concerns of the system safety engineering discipline. A strategy is necessary to ensure that safety objectives are considered during system architecture model development while maintaining the required organizational independence between system safety and the domains with which they interface. This paper details an approach to include a view in an architectural model that addresses system safety objectives.

Skills

Linux Application Development

- c
- c++
- python 3
- tdd

DevOps

- git
- ci
- cmake
- platformio
- static analysis
- code coverage
- doxygen
- docker

Embedded Development

- stm32
- threadx rtos
- c
- c++

Web Development

- flask
- mysql
- sqlite
- aws
- elasticbeanstalk
- dynamodb