

# Brian T. Jenkins

Software and DevOps Engineer

## Contact

### Email

[brian@jenkinz.com](mailto:brian@jenkinz.com)

## 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 primarily responsible for development of Flight Management System (FMS) application software. In addition, I'm responsible for the design and implementation of the navigation database, CI pipelines, and build tools for all of our applications (both Linux and embedded). Test-driven development is employed, and software is developed in accordance with RTCA DO-178C. Testing, internal tools and CI use C++, Python 3, 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 navigation, flight planning, 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 C/C++ applications) handling safety-critical sensor and data processing tasks.

### Highlights

- Design and implement FMS application software handling flight planning, configuration, and display control tasks
- Design and implement navigation database (updatable over-the-air every 28 days)
- Leverage MQTT for telemetry and interprocess communication
- Responsible for test-driven development processes, build and release system, and CI infrastructure
- Deploy modern C++ idioms to embedded applications (let the compiler catch more errors earlier in the development cycle and free developers to reason about higher-level application problems)

## 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." Our 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

- Successfully lead completion of safety assessments for 4 unique contracts
- Developed an integrated model-based analysis technique for system/software safety

## vFlyer

August 2009 — June 2012

### Software Engineer


<https://vflyer.com>

Maintained and 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