

Carolyn Maynard

Senior Flight Software Engineer, Full-Stack Developer

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PERSONAL SUMMARY

Extensive experience designing, developing and delivering software. Most recently supporting the Simulation and Support Equipment effort for the JPL Psyche Mission writing, designing and adapting JPL software models of satellite components used for testing the flight software. Highly adept at adapting skills to different frameworks and development environments. Strong background in a variety of fields, including flight software, simulation software, hardware interfaces, 1553 bus interface, website development, and databases. Seamlessly melds with existing projects to quickly engage productively. Works well within a team or independently.

AREAS OF STRENGTH

- C++, C
- Green Hills MULTI & Integrity, WSTS
- Git, GitHub, CPPUnit, Jenkins
- PHP, CakePHP, Lua, MySQL
- RETS MLS Interface
- MVC Paradigm
- Object Oriented Programming

Other skills:

- CSS, Bootstrap, HTML, JavaScript
- WordPress
- MS Office
- Adobe Photoshop, Dreamweaver, Illustrator
- MAMP, Unix, Amazon Web Service
- Macs, PC's, Linux workstations

Other languages used:

- Ada, Fortran, Pascal, Python, Swift 4 and Assembly

PROFESSIONAL EXPERIENCE

JPL/Raytheon – Pasadena, CA

March 2019 to PRESENT. Software Engineer.

Psyche SSE Software developer. Redesigned, wrote and tested the Power Switch Slice (PSS) and Change of State (COS) models. Adapted the PDA, MREU, SDST, TWTA, WTS, MBUS Monitor, and Imager models into the Psyche WSTS/SSE platform. Created test procedures, CppUnit tests, and many Wiki pages for the different elements of the adapted models. Responsible for SSE software testbed releases. Products used include Eclipse, Git, WSTS, and Green Hills MULTI. Subcontracted to JPL through Raytheon and RAI Associates. Work on-site and remotely.

August 2018 to February 2019. Flight Software Engineer.

ASTERIA III Demo project. Support integration of existing Auto Navigation (AutoNav) and Multi-Mission Executive (MEXEC) C software into the existing ASTERIA C++ F-Prime flight software. Under the direction of the software lead, added new components, fixed existing bugs, performed sizing, timing, integration and deployment testing using both a Linux workstation and the CORTEX160 testbed. Modified existing Python tests to verify new capabilities. Ran static analysis using Semml and Coverity. Supported writing procedures for testbed testing and developer workflows. Products used include Sublime, Git, redo, bash shell scripts, Markdown, Groff, vim, Python scripts, Google Test, remote ssh logins, and VPN's. Tracking code updates through Git repositories using branches, issues and project boards. Subcontracted to JPL through Raytheon and RAI Associates. Work on-site and remotely.

CaMaSoft Consulting – Rancho Palos Verdes, CA

September 2013 to PRESENT. Owner.

Full-Stack website development and maintenance for several small clubs, non-profits and businesses using a variety of platforms depending on the needs of the customer. Developed from scratch the PV Bike Chicks website in PHP and the SafetyBeltSafeUSA and TrojanDiveClub websites in CakePHP 2. Both required a public facing website, a private member login website and an administrative backend website. Developed WordPress websites for SkiThePeak and the InternationalFloralTradeCenter. Maintain all of these websites in the private Camasoft GitHub.

TRW Inc. (Northrop Grumman) - Redondo Beach, CA, Colorado Springs, CO

January, 1985 to August, 2015. Member of the Technical Staff. Held high level government security clearances.

Successfully delivered and launched the flight software for the NASA TOMS-EP Light Satellite as the working software project manager of a team of 5 engineers. After completing the data storage portions of the C FSW, took over as manager for the remaining FSW development, testing and launch, including ACS, EPS, C&DH, EXEC, etc. Worked on numerous other embedded flight software programs and ground support projects. Responsibilities included satellite/rocket launch support, software management, requirement specifications, software design, development, prequalification testing, formal qualification test and flight testing. Languages used included C, C++, Assembly and Ada. Tools used were SYBASE database, VRTX (acquired by VxWorks), PVCS (like SVN/Git), Unix, Sun Workstations, and the Microsoft Office suite. Programs: TOM-EP Satellite, CCD Camera for the GUPS Satellite, ASAT, SKYCAP Satellite, MILSTAR Satellite and many others. Received NASA and TRW awards for on-flight modifications of the flight software to

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recover the TOMS-EP satellite which entailed uploading modified flight software developed and fully tested on the ground testbed prior to uploading to the spacecraft. Retired, August, 2015.

NuOffer - Toluca Lake, CA

March, 2011 to January, 2015. Senior Software Developer.

Successfully delivered backend MLS retrieval product. Created and delivered a full-stack testing platform. Provided ongoing full-stack support for all development phases of this startup real-estate offer writing app. Primarily used CakePHP v2 as well as MySQL, JavaScript, jQuery, CSS, Twitter Bootstrap and HTML and Lua/Corona SDK. Locally tested using a MAMP server then uploaded to the live server. Worked remotely with weekly meetings at the office.

Successfully completed the complicated task of importing property and agent data as well as property images from many different MLS feed databases using the Real-Estate Transaction Specification (RETS) into a MySQL database. Each RETS feed is uniquely designed and required extensive testing to successfully integrate into the app MySQL database system. This was originally written in PHP then refactored when the company to transition the entire backend to CakePHP.

Other responsibilities included designing, developing, and delivering a full-stack testing platform to verify app upgrades. Worked with the customer service department to create an intuitive interface for building and running these unit tests. Supported front-end app development using the Corona SDK and Lua programming language. Tested the viability of using as the Amazon Web Service (AWS) as a possible operational environment for the app.

MCI Inc. - Colorado Springs, CO

January, 1995 to October, 1995 Traffic Systems - T2000. Sr. Staff Specialist.

Responsible for the design and development of the CUBE Extraction software. The CUBE is the repository for the corporate "Copy of Record" of the billable phone calls. The Extraction software sends the call records to the appropriate billing systems for revenue collection. This was written in C++ using the AIX operating system and the SYBASE database.

The Aerospace Corporation - El Segundo, CA

June, 1980 to December, 1984 Applications Programmer, Data Communications Trainee, Computer Operations Trainee.

Progressed from a summer-hire Computer Operations trainee to maintaining many accounting programs, eventually branching into data communications. Did this while a full-time student at the University of Southern California, pursuing a Bachelor of Science degree in Computer Science.

ACADEMIC QUALIFICATIONS

Bachelor of Science, Computer Science

University of Southern California

Post-graduate Courses Completed

+ EE 552 - Advanced Logic Design and Switching Theory

+ CSCI 477L - Design and Construction of Large Software Systems (Software Engineering)

**Green Hills
MULTI & Integrity**
August, 2022

**CakePHP V3
Certificate**
Virtual, 2016

Swift 4 and Xcode
Online class, 2017

**PHP and MySQL
Certificates**
Santa Monica CC, 2011

AWARDS, HONORS AND ACTIVITIES

JPL – Award for SSE support on the Psyche Mission.

NASA – Commendation for recovery of the TOMS-EP satellite.

TRW – Group award for the recovery of the TOMS-EP satellite. Received 7 special awards for outstanding work.

The Aerospace Corporation – Work/study Program. Reimbursed for tuition and books while working 20 hours a week and attending USC as a full-time student.

Chi Omega Sorority – Treasurer, Fund Raising Chairman.

USC Panhellenic – Rush Counselor, 1984.

CSULB – Water-ski Team, Crew, Residence Hall Senator.

Rolling Hills High School – All-CIF, Softball, 1978; Athlete of the Year Nominee, Softball, 1978.

Torrance Memorial Hospital – Volunteer, over 100 Hours.

German Language Skill – Spent 5 months of 1988 in West Berlin, living in a suburb and studying the German Language.

PV Bike Chicks – Founding President, current Treasurer and Member of the Board.

USC Diving Team – Volunteer to run the meet software during competitions.