CHARLES R. GILBRETH JR.
San Diego (Remote)
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Portfolio: https://crgjr66.github.io/

Professional Skills:
GIT/Github, Javascript, TDD, HTML, CSS, React, Ruby, Rails, Rspec, PostgreSQL, Assembly, C, ISO 9000 Certification, ESD Certification, SDS/MULTI/Microtek RT Debug Tools, Motorola 68332/CPU 32 HW/SW, LabWindows National Instruments DAQ HW/SW, GPIB/IEEE 488.2, ARM7/ARMv8/ARM9/ARM11/Scorpion/CortexM3 Microprocessor HW/SW, Lauterbach JTAG Emulator/Debugger Trace32, Perforce version control SW

Patents:

* Co-Developer, Control Strategy for Turbine Operation at Maximum Power and Efficiency

WORK EXPERIENCE:

Qualcomm Inc., San Diego, CA
Principal Software Engineer/Manager

- SW team lead/developer of a small team responsible for supporting local and international HW teams with test code for HW bringup and new chipset validation., including sustaining engineering, DVT testing, and Manufacturing
- Experience debugging and coding the following bus protocols and peripheral devices: I2C, SPI, USB, UART, memory, SD/MMC, eMMC, sensors, Display, touchscreen, UIM, Camera
- SW lead/developer for the Carmen "world" phone project during development and acceptance phase operating in both GSM and CDMA modes using the MSM6300 chipset.
- Debugged/solved audio, battery charging, and other issues during the final SW release of the QSec-2700 based phone, using the MSM6050 and MSM5100 chipsets.

QCP Inc., San Diego, CA
Software Engineer (Staff)

- Worked on a variety of SW development teams, integrating phone HW with CDMA software based on the MSM3100, MSM5105, MSM5010, and MSM5100 chipsets
- Troubleshooting and debugging issues in a majority of the CDMA functional software including: UI, Search, Call Processing, File System, Audio/VR, Diagnostics, Call Manager, etc.. using the Lauterbach In-Circuit Debugger and Emulator
- Implemented software algorithms that alter the functionality of the embedded software to meet customer requirements and fixed numerous field related carrier issues.
- Co-lead on the following phone projects: QCP-2035, QCP-2135, QCP-2235/2255, QCP-2325/2345 responsible for schedule, resources, staffing, overseeing SW development and HW/SW integration.

QUALCOMM Inc., San Diego, CA
Software Engineer (Senior)

- Member of the Software Integration team, which was responsible for troubleshooting and debugging all software modules within the CDMA phone software.
- White-box testing of embedded software using the Lauterbach Trace 32 debugger and ICE In-Circuit Emulator at the hardware level
- Assembled a new hire guide for the integration team to help get new hires up to speed quickly regarding policy, procedures, and development/debugging techniques.
- Co-lead for the QCP-2035 phone project responsible for schedule, resources, staffing, overseeing SW development and HW/SW integration.
- Work with project engineering, product test, configuration management, consumer test, and program management to ensure that quality software meets all requirements and is delivered on time.

CAPSTONE TURBINE CORPORATION, Tarzana, CA
Lead Software Engineer (Senior)

- Working knowledge of the MC68332 microprocessor as the core of the power electronics/turbogenerator controller.
- Developed embedded controls and enhanced fault detection for ground power and vehicular turbogenerator systems.
- Wrote software, fault code verification test documentation, and engine control to support initial UL certification. Troubleshooting and development of the AVS vehicular system used by the Tennessee Valley Authority in commercial transportation.
- Developed and implemented a "Software Quality Test" to help insure the integrity of the embedded software and its performance in the field.
- Acting administrator for the VSS revision control system, responsible for setting up directory structure, user rights, and demonstration of product to other users, wrote specification that outlines the archive and release process from product development through the formal Test and Release process involving configuration control.
- Implemented low level drivers to establish correct software communications between the power electronics controller and drive for the low pressure radial flow compressor.
- Developed Access database to store, retrieve, categorize, and cross-reference engineering specifications as they pertain to test and certification
- Developed ATE hardware and software to perform "hands-off" manufacturing tests for PC boards using NI data acquisition hardware, LabWindows/CVI C/C++, National Instruments Test Executive, and National Instruments SQL Toolkit.

TRW, AVIONICS SYSTEMS DIVISION, San Diego, CA
Software Engineer

- Developed CSCI (Computer Software Configuration Items) level real-time embedded software, per DOD-STD-2167A (flight critical), targeted for the F-22 aircraft multiprocessor Integrated Avionics System.

- Source code written using Ada '83 in a VAX/VMS environment, targeted for the Intel I960 32-bit processors and Motorola C31 32-bit DSP's.
- Performed Rate Monotonic Analysis on the F-22 software, developed RMA test tools to perform validation of timing requirements, and worked with systems engineering to allocate system resources based on hardware requirements and customer specifications.
- Received Director's Award for producing RMA and RMA Test Tools in addition to documenting specific detected problems with software design and implementation, and producing solutions to be implemented prior to integration.

SUNDSTRAND POWER SYSTEMS, San Diego, CA
Lead Software Engineer

- Developed and maintained Hardware/Software integration Testing, Software Design Documentation, and Version Description which ensures traceability between the System Specification and embedded software.
- Developed, documented, and tested software for real-time embedded applications in a UNIX and DOS/Windows environment.
- Worked on V22 program developing software embedded into an ECU (Electronic Control Unit) which monitors and controls an APU (Auxiliary Power Unit) via a wiring harness used on the V22 tilt rotor aircraft.
- Executed the installation and implementation of hardware interrupts, speed circuit tests, task maintenance and communication, RAM testing, NVM storage, and fault detection algorithms.
- Created and modified Software Desk Guides used within the department to assist in the design and software development process.
- Produced a Windows on-line help facility for the V22 program and performed conversion of existing 'C' code to C++ for analysis of improved reusability.

EDUCATION:
CHAPMAN UNIVERSITY, Orange, CA
B.S. COMPUTER SCIENCE

UCSD EXTENSION, San Diego, CA
Extended Studies (Computer Science) - Present
Windows Programming, C++
Embedded Microcontroller Programming

QUALCOMM UNIVERSITY, San Diego, CA
Cdmaone Standard - Is-95a, Object Oriented Programming C++, Essential C++, CDMA-120-B TELECOURSE, Perl For Programmers, CDMA 2000 for Product Test Engineering, Power Point - Beginning, Time Management, Managing/Leading Effective Teams

LEARN Academy, San Diego, CA
Full-Stack Software Development, GIT/Github, HTML, CSS, Javascript, TDD, React, Ruby, Rails, Rspec, PostgreSQL