

**Reed Morrison**

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**RECENT EXPERIENCE**

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**Software Development:**

- Topics: web server development, web application security, distributed computing
- Languages: C, C++, Python, Bash, Golang
- Process: Agile/SAFe

**Education:**

B.S. Electrical Engineering (University of California Davis)

**PROFESSIONAL EXPERIENCE**

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**Sr. Principal Development Engineer** (CDN) EdgeCast, Playa Vista, CA  
(September 2019 - Present)

Edge front-end server development, including L7 load balancing, TLS termination, etc

**Security Core Development Lead** (CDN) EdgeCast, Playa Vista, CA  
(August 2016 - September 2019)

Lead security application development for a large global CDN with thousands of customers. Product lines included: WAF, L7 rate-limiting, and basic bot mitigation. Developed multi-tenant ModSecurity conformant WAF allowing for improved performance, and scale. Conducted code reviews, audits, and large-ish refactors of several internal and external team projects.

**Sr. SW Developer** (CDN) EdgeCast, Santa Monica, CA  
(August 2013 - August 2016)

**WAF and Rate-Limiting back office**

Designed and developed the security product back-office supporting the WAF and L7 rate-limiting products, including: configuration API's, fast global config distribution, logging pipelines, and an HA data cluster with customer facing dashboard API's.

**Edge to Origin TLS configuration**

Developed customer "Edge to Origin" TLS configuration including, hostname validation, cipher specifications, and certificate pinning.

**Sr. SW Developer** CounterTack (Endpoint Security), Santa Monica, CA  
(April 2011 - July 2013)

**VM Introspection Solution**

Improved performance and reliability of existing forensics collection/analysis projects. Developed interprocess elastic buffer library with test harness. Removed analysis SW bottlenecks identified via performance profiling. Developed automated testing suite to spin-up/attack VMs, and to verify correctness of forensics results. Optimized VM system collection stack increasing data throughput, and VM performance.

**Embedded SW Engineer** Northrop Grumman Space Technology, Redondo Beach, CA  
(August 2007 - March 2011)

**Satellite - Communications System Payload Firmware:**

Lead firmware developer for command and data handling computer. Firmware bootstrapped flight SBC, including run-time initialization, bridge configuration, and ground command-able loading/patching of the flight application. Created requirements, design, and test documentation. Developed suite of SW utilities to facilitate firmware SW unit testing, including an EEPROM file system layout tool, and a diagnostic serial shell supporting program loads/memory dumps/EEPROM burns.

**Satellite -Control System Payload SW Verification:**

Led flight SW verification effort including development of test requirements, test-set HW/SW, and verification SW. Verified HW and SW aspects of the target against program requirements. Notable features of test-set included: JTAG/Serial/1553 I/O, a scriptable remote controlled interface for full-scale remote automation, database uploads, and test vector integration for comparing simulated control laws to actuals running on the target.

**Electrical Engineer** ATK Space and Sensors, Torrance, CA  
(July 2001 - April 2007)

**Medical Imaging System:**

For the Wellman Center of Photomedicine, developed fast data acquisition/storage system for a medical imaging application running on a single board computer. Wrote low overhead high speed file system for managing data stored to a RAID from the SBC via fiber-channel. Co-developed fast B-Spline interpolation and baseband conversion algorithms for an FPGA.

**Laser Radar System:**

Developed laser radar data acquisition/processing server application for multi-CPU single board computers. Demanding real-time performance requirements were met by: vectorizing radar algorithms, distributing workload over many CPUs, and optimizing corner turns per cache size. Developed multi-processor notification/communication driver with POSIX-like interfaces. Created fast 2-D graphing framework for Mac OS X that was successfully deployed in 5 projects.

**Research Engineer** CIPIC Interface Lab, Davis, CA (May 2000 – June 2001)

**3-D Audio Research**

Created new experimental setup, including analysis SW, for measuring the effect of the human ear on audible sound with the goal of recreating spatial (3-D) audio in headphones. Developed approach to combining separate analytical head and ear responses to create an approximate total response function.

**Conference Paper:**

"Structural composition and decomposition of HRTF's, " V. Ralph Algazi, Richard O. Duda, Reed P. Morrison, Dennis M. Thompson, in WASSAP '01 (2001 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics)

**REFERENCES**

Available upon request