J. Rick Ramstetter

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(###) ###-####, github.com/ut3

Summary

- Four years multidisciplinary experience working remotely with embedded systems as part of a Scrum team
- Ten years experience working with C/C++ on embedded Linux platforms
- Open source contributions to glmark2 graphical benchmark, gstreamer media library, Kimchi HTLM5 Linux KVM frontend, xmr-stak-cpu cryptocurrency miner, and snapbtrex btrfs backup utility

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Experience

Zodiac Aerospace, zii.aero
Staff Engineer, Rave2020 Platform team — Remote (Sep. 2018 - Present)

- Modernized the OS on dozens of mass-produced ARM devices by upstreaming board support to Linux, avoiding proprietary BSPs, and using modern protocols, libraries, and languages
  - e.g fbdev to Wayland, SDL 1 to 2, GStreamer 0.10.36 to 1.16.2, GCC 4.9 to 7.0, C++98 to C++14
- Created device-specific optimizations for media decode and rendering to ensure optimal playback (V4L2, VAAPI)
- Patched application stack as necessary to ensure minimal interrupton to application developers
- Pioneered using Docker and LXC to manage x86-32 dependencies in the app stack, including Jenkins integration, to allow for builds on x86-64 operating systems

Staff Engineer, Content Load 2 team — Remote (2016 - Sep. 2018)

- Created a multicast content (e.g. movie files) distribution system in use on hundreds of aircraft capable of ranking and distributing-by-rank to a variety of ARM devices in flight
- Developed a FUSE filesystem frontend to that distribution system supporting optimal and seamless transition between multicast and unicast distribution

Senior Engineer, Generalist — Brea, CA (2012 - 2014)

- Created a solution for a faulty SD card reset line impacting thousands of fielded devices, preventing hundreds of thousands of dollars in factory returns. The “safe-sd” kernel module for Linux 2.6 tied the software initiated reset signal to a power management IC action.
- Developed Zii’s GStreamer media stack, including porting to new hardware platforms and bugfixes

SpaceX, spacex.com
Flight Software Engineer — Hawthorne, CA (2010 - 2012)

- Lead an R&D project to execute two instances of Linux on a single, multi-core PowerPC device to enable fault tolerant flight control calculations via OpenMCAPI and “asymmetric multiprocessing.”
- Supported initial bringup of new fault tolerant PowerPC devices using U-boot and Linux
- Offloaded secondary telemetry work from the primary flight control process, allowing the PREEMPT_RT Linux process scheduler to prioritize mission-critical work, by creating a new, low-priority process
- Managed configuration and software compatibility for the Dragon spacecraft’s “GNC bay door” on Commercial Orbital Transportation Services demo missions

Rutgers University, cs.rutgers.edu
Graduate Student & Teaching Assistant — New Brunswick, NJ (2008 - 2010)

- Created a fault-tolerant distributed data store using Consistent hashing to map networked nodes, with a FUSE interface to the Linux userspace
- Created a network simulator in *MATLAB* with real-time graphical visualization of packet streams, and implemented a trajectory-based routing protocol using Bezier splines atop that simulator
- Modified Linux 2.6’s networking stack and *madwifi* driver to reduce latency of ICMP “request” and “reply” (ping) packets in support of WiFi-based localization using commercial hardware

Publication

- Ramstetter, J. Rick Yang, Yaling; Yao, Danfeng:
  Applications and Security of Next-Generation, User-Centric Wireless Systems.
  Future Internet 2(3): 190-211 (2010)

Education

Rutgers, the State University of New Jersey
Master of Science, Computer Science, 2008 - 2010

University of California, Irvine
Bachelor of Science, Computer Science and Engineering, 2004 - 2008

Programming Language competencies

Language	Style	Competency
C++98	Object Oriented	High
	Generic Programming	High
	Metaprogramming	Moderate
C++14	(new features)	Moderate
Java 6	Object Oriented	Moderate

Language	Competency
C89, C99	High
Bash	High
Python	Moderate
Matlab	Moderate

About Me

- Work from a home lab with power supplies, an oscilloscope, and a logic analyzer
- Comfortable with all aspects of remote work, including large remote meetings via video, remote presence on projects, and communication via chat room (IRC, HipChat, Slack, RingCentral/Glip, etc.)
- Comfortable reading schematics for digital systems
- Enthusiastic about pair programming, particularly in groups of 2 or 3
- Experienced navigating voluminous documentation, including Qt and GLib Foundation projects
- Backpacked the Appalachian Trail and approx. 1,200 miles of the Pacific Crest Trail (Mar. 2014 to Nov. 2016)