Matthew J. Schnaider

San Diego, California

career@schnaider.net

Summary

I am a software engineer who enjoys innovative research, development, design, implementation, deployment, debugging, and maintenance of software systems in a Linux or Unix environment and cross-compiled for embedded applications. I have successfully led small teams and mentored junior engineers, but I also work well as a sole contributor or collaborator.

Skills and Experience

Twenty years of software development spanning Unix, Linux, mobile, and embedded systems
Development under Linux and Windows for Linux, Android, RTOS, and bare-metal targets
Recent languages: C++, Python, sh/bash/etc.
Other languages: C, Java, MySQL, ARM assembly, MIPS assembly, Tcl, Perl, LISP, Procmail

Loon, LLC, Software Engineer, June 2019 – Present

Owned ground-to-air communications software modifications required to support Loon on a fixed-wing aircraft.

Updated Loon telemetry pipeline to provide higher-precision, lower-latency telemetry to support tracking of aircraft moving at substantially faster velocities than Loon balloons.

Managed build and release pipeline for backhaul communications payload and ground station software.

Debugged loon network backhaul issues, oversaw build and release process for groundstation and communications payload software, and release rollouts to groundstations and balloon fleet. Supported Loon backhaul network during commercial service with 24x7 oncall support.

Abalta Technologies, Inc., Software Architect, December 2016 – May 2019

Led a team to develop, deploy, integrate, and maintain connected vehicle embedded SDK and companion smartphone apps. Contributed to design and implementation of new features and performed code reviews.

Supported embedded SDK integration into in-vehicle infotainment systems by automotive OEMs and aftermarket vendors. Supported full mobile app product life-cycle, including accessory certification, app store deployment, analytics, and crash reporting.

Prototyped an Alexa Skill for connected, in-vehicle experience demo for CES 2017.

On-Ramp Wireless, Inc. / Ingenu, Senior Staff Software Engineer, 2011–2016

Designed, implemented, integrated, and debugged embedded firmware for smart electric meter AMI (Advanced Metering Infrastructure) wireless communication modules. Supported development of high-availability RPMA back-end gateway for network data aggregation and forwarding.

RPMA Gateway, Technical Lead

Supported Gateway Team in final stabilization of the RPMA back-end gateway in preparation for launch of the Ingenu M2M / IoT national Machine Network. Debugged / fixed issues in multi-threaded C++, MySQL gateway application and in-house ORM framework.

AMI Firmware, Technical Lead

Led small team for firmware development, assigned tasking, and prioritized features and fixes. Contributed to design of application protocol, power consumption modeling and testing, and RPMA MAC enhancements driven by AMI application. Oversaw performance metrics for tens of thousands of deployed units, triaged RMA units, performed recovery and analysis of bricked units, etc.

Collaborated with HW team to support bring-up, clock init, HW validation, FCC certification, calibration, and manufacturing.

Implemented very-low-power "last gasp" functionality to monitor power quality and report power failures over the air using remaining energy. Wrote custom ARM exception handler in ARM assembly, providing persistent debugging breadcrumbs across reboots.

Gateway Load Simulator, Technical Lead

Adapted RPMA access point code to provide load simulation for millions of nodes against the backend gateway system. Simulated and emulated relevant portions of the RPMA MAC to demonstrate gateway capacity.

JetHead Development, Inc., Lead Software Engineer, 2006 – 2011

Designed, implemented, integrated, and debugged embedded Linux applications for DIRECTV HD+DVR, Whole-home DVR, MediaShare, DIRECTV2PC, and HDPC20 systems. Provided full product-cycle support including remote analytics, debugging, and maintenance. Led small teams on various projects. Key contributions in the areas of time synchronization, digital rights management, cryptographic key protection, and targeted advertisement insertion.

Represented JetHead as a member of the DLNA Technical Committee RVU Task Force and the RVU Alliance Technical Working Group. Contributed to RVU specification, interoperability discussions, and testing and certification criteria. Oversaw DLNA Certification process for DIRECTV MediaShare.

University of California, Los Angeles, Graduate Student Researcher, 2001–2006

Graduate Research Assistant, Laboratory for Advanced Systems Research

Designed and implemented 802.11b positioning system to support a mobile, interactive narrative framework.
Designed, simulated, and analyzed a protocol for combating IP spoofing.
Assisted on projects in the areas of DDoS defense and ubiquitous computing.

Teaching Assistant, Artificial Intelligence, Spring 2004, Winter 2005

Graduate Education

University of California, Los Angeles. Master of Science in Computer Science in the field of Software Systems, 2006. Coursework and research in Systems, Networks, Security, Cryptography, and Artificial Intelligence.

Undergraduate Education

Harvey Mudd College, Claremont, CA. Bachelor of Science in Computer Science with minor emphases in Mathematics and Linguistics, 2001.

References available upon request.

The most recent version of this resume is available in a variety of electronic formats at https://www.cs.hmc.edu/~ms/resume

Revision 5.0