

## Matthew Joseph Schnaider

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### Summary

I am a software engineer who enjoys innovative research, development, design and implementation of software systems in a Linux or Unix environment. I have experience as a technical lead for small teams, but I also work well on my own. When prototyping, I have the versatility and ingenuity to rapidly produce a working proof of concept. When designing and building production systems, I have the vision and perseverance to deliver a thoughtfully-developed, elegant, and maintainable product. I enjoy learning new things and expanding my skills, and I can quickly and smoothly adapt to meet the needs of any organization. My software development expertise is complemented by a broad education in the fields of computer science and mathematics with particular depth in the areas of software systems, networks, security, and cryptography.

### Skills and Experience

Thirteen years of software development experience under Linux and Unix

Programming languages used: C/C++, Java, Python, Perl, sh/bash/etc., Tcl, LISP, Procmal

Experience with gdb, make, valgrind, uClibc/buildroot, STL, mercurial, SVN, CVS, and related tools

Experience with MPEG2-TS, NDS CDI, UPnP, DLNA, DTCP, PBDA, WM-DRM, RVU

Operating systems administered: Linux, Unix (Solaris, OpenBSD), Mac OS X

Additional operating systems used: Windows (Vista, XP, NT, 2K)

#### **JetHead Development, Inc.**, Principal Engineer, DVR Architecture, July 2006 – Present

Designed, implemented, integrated, and debugged embedded userspace software for DIRECTV HD+DVR systems. Led small teams (2–5 engineers) on various projects.

#### Middleware Integration and Porting, Lead Engineer, November 2010 – Present

Led a team to integrate next-generation STB middleware on a new OEM platform including a new SOC and new drivers. Assisted in marketing to OEM customer to secure contract, SOW, LOE, and project planning.

#### RVU Alliance Technical Working Group, January 2011 – Present

#### DLNA Technical Committee RVU Task Force, January 2011 – Present

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.

#### DIRECTV Whole-Home DVR, Lead Engineer, October 2007 – January 2011

Contributed to design and specification of DIRECTV Whole-Home DVR STB-to-STB streaming protocol. Led a team to adapt and integrate changes to the DIRECTV2PC streaming server to support STB-to-STB streaming. Provided full product cycle support including debugging and maintenance.

#### DIRECTV MediaShare / DLNA MediaRenderer, Lead Engineer, January 2008 – January 2011

Led a team to improve and stabilize DIRECTV MediaShare. Led design rework discussions for various sub-components. Managed DLNA certification process for the product.

#### DIRECTV2PC, Lead Engineer, May 2007 – January 2011

Contributed to design and specification of DIRECTV2PC streaming protocol. Collaborated to design, implement, and integrate an embedded STB server to stream video from an STB to a PC client. Provided full product cycle support including debugging and maintenance.

DIRECTV HMC30 / RVU Specification, October 2007 – October 2008

Contributed to early drafts of the RVU Alliance RUI specification. Lead engineer for topics of time synchronization, key protection, and targeted advertisement insertion.

DIRECTV HDPC20, Lead Engineer, July 2006 – September 2007

Co-led a team to design and build middleware for the DIRECTV HDPC20. Collaborated with engineers at Microsoft, Broadcom, Pace, Digital Keystone, and DIRECTV, to design, implement, and integrate middleware, video stream transcoding, and DRM functionality into a PBDA-compliant, DIRECTV tuner module for use with Windows Media Player as a PC-based DVR. Led design and specification work at multiple layers of the software stack.

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

Graduate Research Assistant, Laboratory for Advanced Systems Research, 2001–2006

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

**The Aerospace Corporation**, Assistant Member of Technical Staff, 2001–2002

Worked on various US government contracts in the areas of system and network security.

Designed and prototyped experimental security software under Linux and Unix.

**ORINCON Corporation**, Intern, Summer 2000

Worked in information assurance and host and network security.

Designed and built multi-platform mobile agents using IBM's Java Aglet Kit.

**Harvey Mudd College**, Computer Science Department System Administration Staff, 1998–2001

Collaborated in building a local replacement for NIS+ using Perl & MySQL.

Performed Unix system and network maintenance and upgrades.

## 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.

## Computer Science Clinic

Aerospace Corporation Network Intrusion Detection Clinic (1999–2000)

Researched common intrusion detection message exchange formats.

*References available upon request.*

The most recent version of this resume is available in a variety of electronic formats at

<http://www.cs.hmc.edu/~ms/resume>