Tommy Johnson
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To work in a technical R&D environment, using open source tools to reduce ideas to practice. My favorite environment is just above the metal, or just above the operating system. If the debugging involves core dumps or an oscilloscope, think of me.

1   Skills

- Analysis of systems from marginal observable

- Unix shell script, awk, grep, sed, etc.

- Low level C programming, including embedded systems and the Unix system call layer

- Assembly language for too many architectures to detail.

- Reverse engineering software systems using Ghidra

2   Summary

I am a computer scientist / reverse engineer; I hold a Masters of Computer Science from Virginia Tech, and have 23 years of experience doing government contract research and development. My work in grad school was in HTTP content delivery networks via satellite links.

At APL, I've been a jack of all trades analyzing embedded systems both small and large, from the physical layer (PC board layout) to the over arching system architecture. I have several years of experience using ghidra to analyze embedded system firmware.

My specialty is not being a specialist. My work at APL is frequently vastly different from my previous projects, each involving learning new systems and new problem domains.

I have designed and constructed component level electronics for embedded computer systems both for personal projects and employers. I am comfortable reading schematics, technical drawings, and data sheets.

I wrote and presented and internal "Introduction to Hardware Reverse Engineering for Software Developers" class.

My personal interests include photography, holography, electronics, optics, and technical history.

3   Education

1995 - 1998	Masters in Computer Science, Virginia Tech
1991 - 1995	BA Computer Science, Math Minor, Concordia College, Moorhead, MN
1987 - 1991	High School Diploma, Blacksburg High School, Blacksburg VA, 24060

4   Work Experience

2007 - Present	Johns Hopkins Applied Physics Lab: Senior Staff II
	Government contract research, reverse engineering of hardware and software interfaces, creating proof of concept code.
2005-2007	Sparta: Principal Scientist
	Sparta purchased McAffee Research.
	Continued the mobile ad-hoc network DARPA contract started at McAffee.
2002-2005	McAffee Research/TIS: Research Scientist
	Worked with the Intel IXP1200 network processor, implementing the Netbouncer IP DDOS mitigating device. Designed and implemented a benchmark for McAffee's webshield virus scanning firewall appliance. Configured a cluster of machines for emulating mobile ad-hoc networks, and member of a team building an intrusion detection framework for the DARPA ID-MANET project.
1998 - 2002	Orblynx, Inc.: Founding employee, Principal Engineer
	Worked on the team designing and implementing the Internet Delivery System, a satellite based web page delivery network.

5   Publications

P. Kruus, D. Sterne. R. Gopaul, M. Heyman, B. Rivera, P. Budulas, B. Luu, T. Johnson, N. Ivanic, and G. Lawler, "In-Band Wormholes and Countermeasures in OLSR Networks", Proceedings of the Second International Conference on Security and Privacy in Communication Networks, SecureComm 2006, Baltimore, MD, Aug. 28 - Sep. 1, 2006.

R. Thomas, B. Mark, T. Johnson, J. Croall, "Netbouncer: Client Legitimacy based high performance DDOS filtering", DISCEX 2003 http://www.cis.udel.edu/ sunshine/F03/CIS659/netbouncer.pdf

A. Mathur, M. Abrams, H. Chen, T. Oishi, T. Johnson, I. Anwar "Adding Intelligence to Satellite-Based Internet Links: Architecture of a Second-Generation Satellite-Based Internet Delivery System" Inet 99 proceedings. (http://www.isoc.org/inet99/proceedings/4q/4q_2.htm)

H. Chen, M. Abrams, T. Johnson, A. Mathur, I. Anwar, J. Stevenson "Wormhole Caching with HTTP Push Method for a Satellite-Based Global Multi-cast Replication System", International Caching Workshop, San Diego, March 1999. http://citeseer.ist.psu.edu/chen99wormhole.html

B. Liu, G. Abdulla, T. Johnson, E. Fox, "Web Response time and Proxy Caching" Tech Report TR-98-07, http://citeseer.ist.psu.edu/article/liu98web.html

6   Security Clearance

Secret Clearance 2004 to present
Top Secret SCI SSBI 8/9/2007 to present