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Robert J. Hansen

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| Summary |  | More than 25 years of professional development experience. Master’s in Computer Science. Completed all coursework for a Ph.D. in computer science. Extensive experience in development, cyberwarfare, and digital forensics. Active TOP SECRET/SCI clearance (reissued December 2022). |
| Technical skills and professional achievements |  | **Software Development*** Java (20+ years); C# (15+ years); C++ (20+ years); Python (18+ years); many others, including Golang, Scala, F#, JavaScript
* Eclipse, Visual Studio, Autotools, the GNU Compiler Collection, Clang/LLVM, XCode
* Familiar with the full software lifecycle

**Networking*** 20+ years experience with IPv4 stacks; 10 years with IPv6; have taught networking at the graduate level; have written a high-volume IPv4/v6 stream dissector and reassembler from scratch

**Operating Systems*** Red Hat Enterprise Linux, Fedora, Ubuntu, FreeBSD, Windows XP and later, MacOS X 10.1 and later
* 23 years of experience with Linux

**Presentations, Open Source Contributions, Etc.*** Black Hat 2005. “Guns and Butter: Towards Formal Axioms of Input Validation.”
* CODECON 2006. “Djinni: Approximating NP-Complete Problems, Fast”
* OSCON 2006. Repeat of the CODECON 2006 presentation.
* DEFCON 14. “Trust But Verify: Auditing Proprietary DRE”
* Member of the board of COIN-OR (Computational Infrastructure for Operations Research)
* Maintainer of the Djinni compressed and simulated annealing library
* Maintainer of the NSRLtools, a set of applications to efficiently query NIST data
* Authored several forensics tools currently in use within the Community
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| Experience |  | senior software engineer, Telos inc.2019-2023* Seniormost engineer on their Ghost product line from version 1.5-present
* Integrated Tor with and into other products to create Ghost
* Deeply involved with AWS deployments, minimizing AWS dependencies so Ghost could be ported to other cloud providers, etc.
* Performed security analyses to ensure client confidentiality while using Ghost

senior software engineer, ironnet inc.2018-2019* Brought on to overhaul an existing non-engineered unmaintainable large Python codebase the entire company depended upon for revenue
* Radically reduced SLOC while increasing performance and reliability
* Left after completing a yearlong assignment, leaving behind a working, high-availability, documented replacement written in Golang

senior software engineer, BOOZ ALLEN HAMILTON2017-2018* Mentored junior engineers in building large, reliable, high-availability software
* Built Golang/gRPC-based high-volume satellite imagery analysis tools, leveraging prior experience with the Quincy program
* Represented my team at national meetings comprising dozens of functional groups

senior software engineer, Armedia inc.2014-2016* Mentored junior engineers in building large, reliable, high-availability software
* Senior software engineer attached to the Quincy forensics toolkit (C#, C++, C, Java)
* Developed new capabilities for the Autopsy forensics toolkit
* Developed of a number of in-house Quincy plugins
* Forensics R&D, including automatic detection of explosions in media, high-speed/high-volume EXIF tag analysis, image ballistics, and more

senior software engineer/sr. principal technical trainer, bae systems2012-2014* Senior instructor for a Community technical operations program
* Senior software engineer attached to the Quincy forensics toolkit (C#, C++, C, Java)
* Implemented new Quincy features, improved the Quincy experience, and had a lot of fun working with a great team

senior software engineer, redjack llc2011-2012* Developed a new network forensics workflow toolkit
* Built an HTML5 + JavaScript + AJAX user interface for it, allowing non-technical analysts to create complex analytics without needing to write a line of code
* R&D into network forensic technologies with prototypes in Java and C++
* Let go in a corporate downsizing: still have great relationships with people there

senior software engineer, mantech2008-2011* R&D into network, memory and mobile device forensics
* Development of new tools which provided wholly new forensic capabilities
* Taught an annual week-long immersive Python course: from nothing to writing real forensics applications in 40 hours of class instruction
* Graduate of ManTech’s Advanced Cyber Training Program (ACTP)
* Instructor for ManTech’s Advanced Cyber Training Program (ACTP)
* I still collaborate on side projects with my former ManTech co-workers

research assistant and instructor at the university of iowa2003-2008* Studies pursuant to a Ph.D. in computer science (coursework complete; thesis remains to be written)
* Awarded a Master of Computer Science degree in May 2006
* Reverse-engineered electronic voting machine and developed exploits against them
* Founding member of ACCURATE (A Center for Correct, Usable, Reliable and Transparent Elections)
* Taught the undergraduate CS curriculum in both Java and C#
* Taught the graduate curriculum in computer security
* Taught the graduate curriculum in software engineering
* Invented a provably-secure defense against SQL injection attacks
* Invented the field of language-theoretic security
* Faculty advisor: Dr. Doug Jones

Chief system administrator, simmons perrine albright & ellwood plc2002-2003* Chief system administrator for a heterogenous geographically-diverse network comprising four locations and almost 200 installations
* Made Novell NetWare, Mac OS X, Windows 95, Windows 98, Windows 2000 and Windows XP speak a common language of SMB/CIFS
* Found cost savings of over $250,000 by replacing per-seat licensed commercial software with open-source alternatives
* Developed custom software solutions when no open-source alternative existed and the cost of a commercial license was too great

senior cryptographic engineer, pgp security2001-2002* Ported the PGP 7.0 codebase to UNIX
* Developed a GTK+ interface for PGP 7.0
* Introduced CRYPTOKI/PKCS11 token support

security engineer and software engineer, exemplary technologies1999-2001* Third engineering hire for a San Francisco dot-com publishing startup
* Last engineer to leave the firm upon its implosion during the dot-bomb downturn
* Developed new DRM technologies and discovered vulnerabilities in competitors’ offerings

software quality assurance engineer, mci1998-1999* Extensive experience in Y2K remediation
* Acquired skills in COBOL, MVS/TSO, CICS, JCL and other mainframe technologies
* Learned a valuable life lesson: I don’t like working with mainframes
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| Education |  | the university of iowa – iowa city, iowa – master of computer scienceMaster of Computer Science degree conferred in May 2006cornell college – mount vernon, iowa – bachelor of arts in computer scienceBachelor of Arts in Computer Science conferred in May 1998 |
| References |  | William a. “contra” trobbianiOffensive Security (former co-worker from IronNet)watrobb@gmail.comjesse d. kornblumFacebook (former supervisor at ManTech)jessekornblum@gmail.comeugene Y. libsterDark Star Solutions (former co-worker from RedJack and ManTech)elibster@gmail.com |