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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 |
| 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 HAMILTON 2017-2018   * 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 systems 2012-2014   * 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 llc 2011-2012   * 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, mantech 2008-2011   * 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 iowa 2003-2008   * 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 plc 2002-2003   * 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 security 2001-2002   * 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 technologies 1999-2001   * 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, mci 1998-1999   * 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 |
| Education |  | the university of iowa – iowa city, iowa – master of computer science Master of Computer Science degree conferred in May 2006 cornell college – mount vernon, iowa – bachelor of arts in computer science Bachelor of Arts in Computer Science conferred in May 1998 |
| References |  | William a. “contra” trobbiani Offensive Security (former co-worker from IronNet)  watrobb@gmail.com jesse d. kornblum Facebook (former supervisor at ManTech)  jessekornblum@gmail.com eugene Y. libster Dark Star Solutions (former co-worker from RedJack and ManTech)  elibster@gmail.com |