

Nathan Coopriider

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Objective Meet interesting people and establish networking relationships in cyber security

Experience **Senior Software Engineer**, Threat Stack. *March 2015–Present*

Senior Software Engineer, Bit9+Carbon Black. *June 2011–February 2015*

- Created Linux kernel module in C++ for intercepting file system operations
- Wrote a CIL analysis to manufacture a C++ interface into the Linux kernel
- Conducted application threat modelling and managed mitigation development
- Supervised summer intern to successful internal deployment of a fuzz tester
- Implemented Linux installer generation using rpm and wrote a tar tool for Windows
- Led development and benchmarking efforts of next-generation security prototype

Senior Software Engineer, BAE Systems - Advanced Information Technologies.
September 2008–June 2011

- Led software team developing signal-processing software for the Lynx GMTI Radar
- Implemented a multi-level-graph-based tracker prototype in C++
- Updated legacy port of tracking software from Linux to VxWorks

Research Assistant, School of Computing, University of Utah. *August 2004–September 2008*

- Developed cXprop, a CIL extension for conditional X propagation
- Implemented RAM compression for AVR MCU code in CComp
- Applied cXprop, CCured, and Deputy to make TinyOS applications memory safe

Research Assistant, Department of Computer Science, Brigham Young University.
September 2003–September 2004

- Expanded the multivariate display of Star Coordinates from two to three dimensions
- Improved data visualization and cluster discovery

Education **PhD in Computer Science, University of Utah** - *December 2008*

- Advisor: John Regehr
- Dissertation: “Dataflow Analysis for Interrupt-driven Microcontroller Software”

BS in Computer Science, Brigham Young University - *April 2004*

- Minors in Math and Spanish

Computer Skills

Proficient: C++, C, Ocaml, Python, Perl, CIL, Doxygen, subversion, Linux, Coverity, Jenkins

Some experience: Java, Visual Basic, nesC, x86 assembly, AVR assembly, Matlab, bash, rpm, tar, SAL, CMake, LaTeX, UML, wiki, XML, HTML, DOT, Windows, OS X, VxWorks, RHEL, LSM, TinyOS, VMware, gdb, google-perftools, cvs, bjam, Sulley, Valgrind, CCured, Deputy, Delta, Eclipse, Visual Studio, Emacs,

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TestTrack Pro

Highlighted Projects

Bit9 Linux – Ported **OS X** version of the product to **Ubuntu Linux**. Consolidated source code into a common **subversion** repository to maximize shared code across platforms. Used **Hudson** for continuous integration to maintain stability of the OS X build during transition. Wrote **CIL** code analysis to automatically construct a **C++** interface to the **Linux kernel**. Dealt with obscure issues from putting C++ in the kernel, such as conflicting calling conventions, inconsistent constructor calls, and empty struct fields.

DualBeam – Programmed software for deployment on and support of the **Predator's Lynx GMTI Radar**. Lead software team during transition phase of development. Rapidly familiarized myself with existing embedded code base for **Mercury system**. Wrote code for several false alarm mitigation algorithms. Leveraged the **Scientific Algorithm Library** to improve performance. Used **Matlab** scripts for unit testing. Developed various conversion tools, including one for **STANAG** data and another for different **ICD** formats.

Safe TinyOS – Worked with four other researchers to implement **type** and **memory safety** in an efficient manner for sensor network nodes running **TinyOS**. Used a modified version of **Deputy** to transform the C program output from the **nesC** compiler. Integrated a source-to-source inliner and **cXprop** into automated toolchain to reduce performance penalties. Evaluated work using **Avrora** simulator and by running applications on **8-bit microcontroller** based nodes. Published work in the proceedings of **SenSys 2007**.

Achievements Member of IEEE Computer Society *2012-present*

Chairman's Bronze Award 2011, Dick Olver, Chairman

Dual-Beam team for "Enhancing Customer Performance" for "Radar Dismount Detection."

Board Trustee, volunteer PDMA-CDMA Educational Foundation. *August 2010-December 2012*

- Directed and developed social-media efforts for organization

Volunteer representative, The Church of Jesus Christ of Latter-day Saints, McAllen, Texas. *May 1999-May 2001*

- Worked with individuals and groups to carry out goals in personal development
- Relocated to the Rio Grande Valley, Laredo and Corpus Christi areas of Texas
- Learned Spanish to communicate with the people

Eagle Scout, Boy Scouts of America, Austin, Texas. *May 1995*

References

Chris Lord, *Chief Architect*: clord@bit9.com (617) 393-7462

Brian Hone, *Lead Engineer*: brian.hone@stresearch.com (617) 216-1061

Dr. John Regehr, *PhD advisor*: regehr@cs.utah.edu (801) 581-4280

Interests

Outdoors, volleyball, frisbee, golf, soccer, basketball, social media, reading, movies, games, soundtracks, computers