

## Publications

*Papers with more than 5 citations are listed from Google Scholar as of January '18. Total Citations: 319. h-index: 8.*

## Refereed Conference

- C.1 Nikos Vasilakis, Ben Karel, Nick Roessler, **Nathan Dautenhahn**, André DeHon, and Jonathan M. Smith. BreakApp: Automated, Flexible Application Compartmentalization. In *To Appear in 25th Annual Network and Distributed System Security Symposium*, (NDSS '18), San Diego, CA, USA, 2018. The Internet Society.
- C.2 Lei Shi, Yuming Wu, Yubin Xia, **Nathan Dautenhahn**, Haibo Chen, Binyu Zang, Haibing Guan, and Jinming Li. Deconstructing Xen. In *24th Annual Network and Distributed System Security Symposium*, (NDSS '17), San Diego, CA, USA, 2017. The Internet Society.
- C.3 Will Dietz, Joshua Cranmer, **Nathan Dautenhahn**, and Vikram Adve. Slipstream: Automatic Interprocess Communication Optimization. In *Proceedings of the 2015 USENIX Conference on Usenix Annual Technical Conference*, (USENIX ATC '15), pages 431–443, Berkeley, CA, USA, 2015. USENIX Association.
- C.4 **Nathan Dautenhahn**, Theodoros Kasampalis, Will Dietz, John Criswell, and Vikram Adve. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. In *Proceedings of the Twentieth International Conference on Architectural Support for Programming Languages and Operating Systems*, (ASPLOS '15), pages 191–206, New York, NY, USA, 2015. ACM. (cited by 24).
- C.5 John Criswell, **Nathan Dautenhahn**, and Vikram Adve. Virtual Ghost: Protecting Applications from Hostile Operating Systems. In *Proceedings of the 19th International Conference on Architectural Support for Programming Languages and Operating Systems*, (ASPLOS '14), pages 81–96, New York, NY, USA, 2014. ACM. (cited by 83).
- C.6 John Criswell, **Nathan Dautenhahn**, and Vikram Adve. KCoFI: Complete Control-Flow Integrity for Commodity Operating System Kernels. In *Proceedings of the 2014 IEEE Symposium on Security and Privacy*, (SP '14), pages 292–307, Washington, DC, USA, 2014. IEEE Computer Society. (cited by 110).
- C.7 Gilles Pokam, Klaus Danne, Cristiano Pereira, Rolf Kassa, Tim Kranich, Shiliang Hu, Justin Gottschlich, Nima Honarmand, **Nathan Dautenhahn**, Samuel T. King, and Josep Torrellas. QuickRec: Prototyping an Intel Architecture Extension for Record and Replay of Multithreaded Programs. In *Proceedings of the 40th Annual International Symposium on Computer Architecture*, (ISCA '13), pages 643–654, New York, NY, USA, 2013. ACM. (cited by 23).

- C.8 Nima Honarmand, **Nathan Dautenhahn**, Josep Torrellas, Samuel T. King, Gilles Pokam, and Cristiano Pereira. Cyrus: Unintrusive Application-level Record-replay for Replay Parallelism. In *Proceedings of the Eighteenth International Conference on Architectural Support for Programming Languages and Operating Systems*, (ASPLOS '13), pages 193–206, New York, NY, USA, 2013. ACM. (cited by 23).
- C.9 Hui Xue, **Nathan Dautenhahn**, and Samuel T. King. Using replicated execution for a more secure and reliable web browser. In *19th Annual Network and Distributed System Security Symposium*, (NDSS '12), San Diego, CA, USA, 2012. The Internet Society. (cited by 13).
- C.10 Shuo Tang, **Nathan Dautenhahn**, and Samuel T. King. Fortifying Web-based Applications Automatically. In *Proceedings of the 18th ACM Conference on Computer and Communications Security*, (CCS '11), pages 615–626, New York, NY, USA, 2011. ACM. (cited by 29).

#### Patents

- P.1 **Nathan D. Dautenhahn**, Justin E. Gottschlich, Gilles Pokam, Cristiano L. Pereira, Shiliang Hu, Klaus Danne, and Rolf Kassa. Mechanism for facilitating dynamic and efficient management of instruction atomicity violations in software programs at computing systems, Noermber 22, 2016. U.S. Patent Number 9,501,340. Filed Mar 15, 2013. Issued: Nov 22, 2016.

#### Refereed Workshop

- W.1 Nikos Vasilakis, Ben Karel, Nick Roessler, **Nathan Dautenhahn**, André De-Hon, and Jonathan M. Smith. Towards Fine-grained, Automated Application Compartmentalization. In *Workshop on Programming Languages and Operating Systems*, (PLOS'17), Shanghai, China, October 2017. ACM.
- W.2 Anupam Datta, Matt Fredrikson, Joel Hypolite, Andrew Myers, Jonathan Smith, Andre Scedrov, Carolyn Talcott, and **Nathan Dautenhahn**. De-Inductive Reasoning and Explanation for Cybersecurity Threats (DIRECT). In *Workshop on Forming an Ecosystem Around Software Transformation*, (FEAST '16), Vienna, Austria, October 2016.
- W.3 Mark Torgerson, Richard Schroepel, Tim Draelos, **Nathan Dautenhahn**, Sean Malone, Andrea Walker, Michael Collins, and Hilarie Orman. The SANDstorm Hash, 2008. Presented at First SHA-3 Candidate Conference by NIST in 2009. [http://energy.sandia.gov/wp-content/gallery/uploads/SANDstorm\\_Submission\\_2008\\_10\\_30.pdf](http://energy.sandia.gov/wp-content/gallery/uploads/SANDstorm_Submission_2008_10_30.pdf) (cited by 8).

#### Theses

- T.1 **Nathan Dautenhahn**. *Protection in Commodity Monolithic Operating Systems*. PhD thesis, University of Illinois at Urbana-Champaign, August 2016. Advisor: Vikram S. Adve.

- T.2 **Nathan Dautenhahn**. *Design and Implementation of a Reputation-Based Trust Prototype Using Persistently Identified NeTworking Research Framework*. Undergraduate thesis, University of New Mexico, 2008. Advisor: Gregory L. Heileman.

### Poster

- P<sub>o</sub>.1 Joana MF da Trindade, Cuong Pham, and **Nathan Dautenhahn**. Poster:  $\mu$ BeR: A Microkernel Based Rootkit for Android Smartphones, May 17 - 20, 2009. Oakland, CA, USA. 30th IEEE Symposium on Security & Privacy.

### Technical Reports

- T<sub>r</sub>.1 Edward L. Witzke, John M. Eldridge, Mark M. Miller, Dallas J. Wiener, and **Nathan Dautenhahn**. Final Report for the Network Authentication Investigation and Pilot. Tech Report SAND2006-7078, Sandia National Laboratories, Albuquerque, NM, USA, November 2006. <http://prod.sandia.gov/techlib/access-control.cgi/2006/067078.pdf>.

### Invited Talks

1. Nested Kernel: A Protection Architecture for Intra-Kernel Privilege Separation. Princeton University (12/17).
2. Nested Kernel: A Protection Architecture for Intra-Kernel Privilege Separation. UCSD (12/17).
3. Nested Kernel: A Protection Architecture for Intra-Kernel Privilege Separation. University of Washington (12/17).
4. Nested Kernel: A Protection Architecture for Intra-Kernel Privilege Separation. Harvard University (11/17).
5. Opportunistic Privilege Separation and Memorizer: LinuxKit Special Interest Group (6/17).
6. Protection in Monolithic Operating Systems. University of Arizona (10/16).
7. Protection in Monolithic Operating Systems. IBM (10/16).
8. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. Cisco (4/16).
9. Protection in Monolithic Operating Systems. University of Georgia Institute of Technology (3/16).
10. Protection in Monolithic Operating Systems. University of Pennsylvania (3/17).
11. Protection in Monolithic Operating Systems. University of Wisconsin-Madison (3/16).
12. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. University of California Berkeley (10/15).
13. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. FreeBSD Developer Conference (6/15).
14. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. École Polytechnique Fédérale de Lausanne (EPFL). Lausanne, Switzerland (3/15).

15. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. University of Cambridge Computer Laboratory Security Seminar. Cambridge, United Kingdom (3/15).
16. Nested Kernel: An Operating System Architecture for Intra-Kernel Privilege Separation. Information Trust Institute, University of Illinois at Urbana-Champaign (3/15).
17. Balancing Graduate Life and Family. CS Department University of Illinois at Urbana-Champaign (3/13 and 3/14).
18. Medical Plug-n-Play (MDPnP). University of New Mexico Electrical and Computer Engineering Department. Albuquerque, New Mexico. (6/09).