ERIC OSTERWEIL

EXPERIENCE

Verisign

Principal Scientist | October 2010 - Present

Applied Security Team Lead, Principal Investigator (PI) on multiple R&D projects including: Verisign's Security Stability and Resiliency (SSR) technical analysis. Reflector DDoS defense system, secure email applications using DANE, Internet routing security (RPSL, RPKI, DANE), cyber threat intelligence information sharing (TAXII/STIX, IODEF/RID), and future Internet architectures built on Named Data Networking (NDN). Research included peer reviewed publications, systems development, and product integration.

UCLA, Internet Research Lab

Ph.D. Research Assistant | June 2004 - August 2010

Under Lixia Zhang and Dan Massey. Research projects included: i) Vantages: Internet-scale Key Infrastructure Verification system for DNSSEC with data provenance, ii) SecSpider: DNSSEC Analysis of global deployment monitoring of DNSSEC: http://secspider.verisignlabs.com/

PARC, a Xerox Company

Intern | June 2008 – September 2008

Cryptographic key learning system for Named Data Networking (NDN) / Content Centric Networking (CCN)

Avaya

Software Architect, Diamond Team, Consultant| May 2004 – December 2004

Designed very large-scale/concurrent event monitoring and actuation system. System, used publish/subscribe to process events from heterogeneous, third party, sources, and to provide scripted interface for users to compose business actions (using BPEL).

Center for Embedded Networked Sensing (CENS)

Software Engineer | 2002 – 2004

Designed and developed: i) Internet publish/subscribe middleware system that supported heterogeneous clients from embedded and server platforms, persistent message buffering (during connectivity disruption), and ii) sensor network routing layer called Tiny Diffusion (based on Directed Diffusion) for TinyOS.

Micromuse, Inc.

Software Architect, Precision Team | 2000 – 2002

Overall software architect, and technical team lead for network auto-discovery product called Precision. Responsible for leading all developers and all aspects of backend system design and programming.

iWon.com

Software Architect | January 1999 – June 2000

Head architect of all strategic development and site infrastructure projects at iWon.com. Maintaining scalability and performance constituted our largest challenge. Scaled using a loosely coupled distributed model, implemented on a custom backbone using message passing.

Thomson Financial

Technical Lead, Hawk Team | June 1998 – January 1999

Acted as technical lead for all developers on Thomson Financial's Hawk project (predecessor model for Big Data analytics). Performed data synthesis and did query plan generation for joins across 15+ federated sources, including both Thomson Financial data/ news and third-party sources using an abstract data-representation system.

RWD Technologies

Engineer | June 1997 – June 1998

Member of the development team.

EDUCATION

Ph.D., Computer Science: University of California, Los Angeles, 2004 - 2010
B.A., Computer Science + Physics: The Johns Hopkins University, ███████

PUBLICATIONS

- MitM Attack by Name Collision: Cause Analysis and WPAD Vulnerability Assessment in the New gTLD Era, Alfred Chen, Eric Osterweil, Matt Thomas, Z. Morley Mao, IEEE Security and Privacy 2016
- Considerations for Internet Routing Registries (IRRs) and Routing Policy Configuration, D. McPherson, S. Amante, E. Osterweil, L. Blunk, D. Mitchell, RFC 7682, December 2015
- The Shape and Size of Threats: Defining a Networked System's Attack Surface, Eric Osterweil, Danny McPherson, Lixia Zhang, Best Paper in Proceedings of the IEEE ICNP Workshop on Secure Network Protocols (NPSec '14) 2014
- Measuring IPv6 Adoption, Jakub (Jake) Czyz, Mark Allman, Jing Zhang, Scott Iekel-Johnson, Eric Osterweil, Michael Bailey, ACM SIGCOMM 2014 August 12, 2014

- Verifying Keys through Publicity and Communities of Trust: Quantifying Off-Axis Corroboration, Eric Osterweil, Daniel Massey, Danny McPherson, Lixia Zhang, IEEE Transactions on Parallel and Distributed Systems (TPDS), vol. 25, no. 2, pp. 283-291 February 1, 2014
- Architectural Considerations of IP Anycast, Danny McPherson, Dave Oran, Dave Thaler, Eric Osterweil, RFC 7094, January 2014
- Dissecting Ghost Clicks: Ad Fraud Via Misdirected Human Clicks, Sumayah A. Alrwais, Christopher W. Dunn, Minaxi Gupta, Alexandre Gerber, Oliver Spatscheck, Eric Osterweil, Annual Computer Security Applications Conference (ACSAC) December 2013
- Behavior of DNS' Top Talkers, a .com / .net View, Eric Osterweil, Danny McPherson, Steve DiBenedetto, Christos Papadopoulos, Daniel Massey, PAM 2012: Passive and Active Measurement Conference March 2012
- Reducing the X.509 Attack Surface with DNSSEC's DANE, Eric Osterweil, Burt Kaliski Jr., Matt Larson, Danny McPherson, Securing and Trusting Internet Names, SATIN 2012 March 2012
- The Great IPv4 Land Grab: Resource Certification for the IPv4 Grey Market, Eric Osterweil, Shane Amante, Danny McPherson, Daniel Massey, Hot Topics in Networks (HotNets-X) November 2011
- Operational Implications of the DNS Control Plane, Eric Osterweil, Danny McPherson, Lixia Zhang, IEEE Reliability Society Newsletter May 2011
- Cross-Modal Vulnerabilities: An Illusive form of Hijacking, Eric Osterweil, Daniel Massey, Christos Papadopoulos, Verisign Labs Technical Report #1140010 March 1, 2010
- Deploying Cryptography in Internet-Scale Systems: A Case Study on DNSSEC, Hao Yang, Eric Osterweil, Daniel Massey, Lixia Zhang, Transactions on Dependable and Secure Computing, Volume 7, Issue 2 January 2010
- Deploying and Monitoring DNS Security (DNSSEC), Eric Osterweil, Daniel Massey, Lixia Zhang, Annual Computer Security Applications Conference (ACSAC) December 2009
- Interadministrative Challenges in Managing DNSKEYs, Eric Osterweil, Lixia Zhang, IEEE Security and Privacy: Securing the Domain Name System 7(5) September 2009
- Managing Trusted Keys in Internet-Scale Systems, Eric Osterweil, Daniel Massey, Lixia Zhang, The Workshop on Trust and Security in the Future Internet (FIST) June 2009
- Quantifying the Operational Status of the DNSSEC Deployment, Eric Osterweil, Michael Ryan, Daniel Massey, Lixia Zhang, Proceedings of the 6th ACM/USENIX Internet Measurement Conference (IMC '08)
- Limiting Replay Vulnerabilities in DNSSEC, He Yan, Eric Osterweil, jon hajdu, jonas acres, Daniel Massey, IEEE ICNP Workshop on Secure Network Protocols (NPSec) October 2008
- Observations from the DNSSEC Deployment, Eric Osterweil, Daniel Massey, Lixia Zhang
- IEEE ICNP Workshop on Secure Network Protocols (NPSec) October 2007
- Zone State Revocation for DNSSEC, Eric Osterweil, Vasilis Pappas, Daniel Massey, Lixia Zhang, Workshop on Large Scale Attack Defenses (LSAD) August 2007