

Casey T. Deccio

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Education

- Ph.D. Computer Science**, University of California Davis *Sep 2010*
Dissertation: *Quantifying and Improving DNS Availability*
- M.S. Computer Science**, Brigham Young University *Dec 2004*
- B.S. Computer Science**, Brigham Young University *Aug 2002*

Work Experience

- Brigham Young University** (Provo, UT)
Assistant Professor of Computer Science *Oct 2016 – present*
- Teach computer science courses to undergraduate and graduate students.
 - Lead research and mentor students in the area of Internet measurement and anti-abuse.
- VeriSign, Inc.** (Reston, VA)
Senior Research Scientist *Jan 2014 – Oct. 2016*
- Contributed to Internet best practices and standards for stable and secure DNS ecosystem.
 - Performed Internet measurement research with focus on new protocols, such as IPv6 and DNSSEC.
- Sandia National Laboratories** (Livermore, CA)
Principal Research & Development Cyber Security Staff *Jan 2013 – Jan 2014*
- Led research and development projects related to scalable virtual computing.
 - Performed research and development on operational DNSSEC and IPv6 deployment.
- Senior Member of Technical Staff** *Oct 2009 – Jan 2013*
- Developed software for DNS maintenance, education, monitoring, troubleshooting.
 - Led production DNSSEC deployment.
- Member of Technical Staff** *Oct 2004 – Oct 2009*
- Performed network engineering and developed and deployed network management software.
 - Deployed, maintained, and troubleshoot network services, including DNS, DHCP, HTTP proxy.
- Internet Corporation for Assigned Names and Numbers** (remote, from Livermore, CA)
Research fellow *May 2013 – Dec 2013*
- Contributed to research, reports, and advisories related to security and stability of the DNS.
- Brigham Young University** (Provo, UT)
Research Assistant, Networked Computing Lab, Computer Science Dept. *Jan 2002 – Oct 2004*
- Explored commercial bandwidth overbooking; investigated network-layer security methods.
 - Authored/prepared research papers for submission and publication.
- Assistant Manager, Open Access Labs** *Apr 2001 – Jan 2002*
- Supervised and managed scheduling of more than 75 computer lab employees.
 - Developed Web applications for employee and administrative use.

Skills

- Programming** – Python, Django, Javascript, jQuery, NodeJS, SQL, Postgres, Java, Perl, C/C++
Systems/protocols – Linux, Windows, Mac OS X, sockets, threads, DNS, HTTP, DHCP, IPv6
Projects – DNSViz - DNS diagnostic and vis. tool: <http://dnsviz.net/> <http://github.com/dnsviz/dnsviz>

Publications

Conference Publications

- “Quantifying and Improving DNSSEC Availability.” (with J. Sedayao, K. Kant, P. Mohapatra)
ICCCN 2011.
- “Measuring Availability in the Domain Name System.” (with J. Sedayao, K. Kant, P. Mohapatra)
IEEE INFOCOM 2010.

“Quality of Name Resolution in the Domain Name System.” (with C. Chen, J. Sedayao, K. Kant, P. Mohapatra) IEEE ICNP 2009.

“A Study of the Suitability of IrOBEX for High-Speed Exchange of Large Data Objects” (with J. Ekstrom, C. Knutson, D. R. Partridge, and K. Tew). GLOBECOM 2003.

Journal Articles

“Maintenance, Mishaps and Mending in Deployments of the Domain Name System Security Extensions (DNSSEC).” *International Journal of Critical Infrastructure Protection*. Jul 2012.

“Quantifying DNS Namespace Influence.” (with J. Sedayao, K. Kant, P. Mohapatra) *Computer Networks*. Feb 2012.

Books and Book Chapters

“Security and Robustness in the Internet Infrastructure” (with K. Kant). In *Handbook on Securing Cyber-Physical Critical Infrastructure*. Morgan Kaufman (2012), Waltham, MA. pp. 705-733.

Quantifying and Improving DNS Availability. PhD Dissertation. University of California Davis, 2010.

Other

““What’s in a Name (collision)?” Modeling and Quantifying Collision Potential.” Workshop and Prize on Root Causes and Mitigation of Name Collisions (WPNC). Mar. 10, 2014.
http://namecollisions.net/downloads/wpnc2014_paper_deccio.pdf

“SSAC Advisory on Search List Processing” (with ICANN SSAC). SAC064. Feb. 13, 2014.
<https://www.icann.org/en/groups/ssac/documents/sac-064-en.pdf>

“SSAC Advisory on DNSSEC Key Rollover in the Root Zone” (with ICANN SSAC). SAC063. Nov. 7, 2013. <https://www.icann.org/en/groups/ssac/documents/sac-063-en.pdf>

“A Case for Comprehensive DNSSEC Monitoring and Analysis Tools” (with J. Sedayao, K. Kant, and P. Mohapatra). *Securing and Trusting Internet Names, SATIN 2011*. Apr. 4, 2011.
<http://conferences.npl.co.uk/satin/papers/satin2011-Deccio.pdf>

Talks

“Pre-Deployment DNS Testing: Or How to Avoid a Train Wreck.” OARC 25. Oct. 15, 2016.

“Multi-vantage point DNS Diagnostics and Measurement.” USTelecom Webinar. Jun. 30, 2016.

“Multi-vantage point DNS Diagnostics and Measurement.” NANOG 67, DNS Track. Jun. 14, 2016.

“Hands-on DNSSEC with DNSViz.” RIPE 72. May 23, 2016.

“Multi-vantage point DNS Diagnostics and Measurement.” OARC 24. Apr. 1, 2016.

“A Looking Glass for DNS Measurement.” AIMS 2016. Feb. 12, 2016.

“Hands-on DNSSEC with DNSViz.” NANOG 66. Feb. 9, 2016.

“Hands-on DNSSEC with DNSViz.” RIPE 70. May 11, 2015.

“A Multi-perspective View of DNS Availability and Resilience.” AIMS 2015. Apr. 2, 2015.

“Do It Yourself IPv6 SMTP Abuse Measurement.” M3AAWG 33rd General Meeting. Feb. 19, 2015.

“DNSViz – Powerful DNS Analysis.” NANOG 63, DNS Track. Feb 3, 2015.

“Detecting and Quantifying Abusive IPv6 SMTP.” Internet2 2014 Technical Exchange. Oct. 30, 2014.

“DNSViz - Powerful and Extensible DNS Analysis.” DNS-OARC Fall 2014 Workshop. Oct. 13, 2014.

“Detecting and Quantifying Abusive IPv6 SMTP.” NANOG 62. Oct. 6, 2014.

“Portable DNS Analysis.” DNS-OARC Spring 2014 Workshop. May 10, 2014.

“DNSViz - Monitoring, Analysis, and Visualization.” DNS-OARC Fall 2013 Workshop. Oct. 5, 2013.

“Qualitative DNS Measurement Perspectives.” NANOG 58, DNS Track. Jun. 5, 2013.

“Solutions and Challenges in Securing the Domain Name System.” University of Nevada, Dept. of Computer Science & Engineering. Apr. 19, 2013.

“Profiling Internet Spammers Using Passive Dual-stack Observation.” AIMS-5. Feb. 7, 2013.

“Qualitative DNS Measurement Perspectives.” TIP 2013. Jan. 19, 2013.

“Qualitative DNS Measurement Perspectives.” ISC/CAIDA Data Collaboration Workshop. Oct. 22, 2012.

“Turning Down the Lights: Darknet Deployment Lessons Learned.” DUST 2012. May 14, 2012.

“Deploying IPv6 in the Enterprise.” ARIN XXIX. Apr. 23, 2012.

“Assessing and Improving the Quality of DNSSEC Deployment.” AIMS-4. Feb. 9, 2012.

“Facilitating Global DNSSEC Deployment.” NANOG 54, DNS Track. Feb. 7, 2012.

“From 0 to 6 in...: IPv6 deployment experiences at Sandia National Laboratories”. Winter 2012 ESCC/Internet2 Joint Techs. Jan 23, 2012.

“Maintenance, Mishap, and Mending in DNSSEC Deployment.” DNS EASY 2011. Oct. 18, 2011.

“Modeling DNS Security: Misconfiguration, Availability, and Visualization.” CERIAS Security Seminar, Purdue University. Mar. 2, 2011.

“Quantifying the Impact of DNSSEC Misconfiguration.” NANOG 51, Feb. 1, 2011.

“DNSViz: A DNS Visualization Tool.” DNS-OARC Fall 2010 Workshop. Oct. 14, 2010.

“Quantifying the Impact of DNSSEC Misconfiguration.” DNS-OARC Fall 2010 Workshop. Oct. 14, 2010.

“Modeling DNS Security: Misconfiguration, Availability, and Visualization.” BYU Computer Science Dept. Colloquium. Sep. 9, 2010.

“Troubleshooting DNSSEC Visually.” Summer 2010 ESCC/Internet2 Joint Techs. Jul. 14, 2010.

“DNSSEC Visualization.” NANOG 49. Jun. 15, 2010.

“Visual DNSSEC Troubleshooting with DNSViz.” RIPE 60. May 6, 2010.