

Umesh Shankar

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Education

University of California, Berkeley (2000-2006)

Ph.D. in computer science (information security and privacy), 2006

Harvard University, Cambridge, MA (1995-1999)

B.A. in Computer Science, 1999, *magna cum laude*

Experience

Senior Staff Engineer, Google, Inc.

August 2006-

Created and still lead the Data Protection effort across Google. Active in multiple areas of security and privacy engineering and internal consulting as well as in the external research community.

Ph.D. Intern, IBM Research, T. J. Watson Laboratory

May 2004-August 2004

Worked in Secure Systems group on trusted computing and information-flow security, with a focus on usability and formal verification. Continuing collaboration to develop formal methods for integrity verification.

Ph.D. Intern, AT&T Center for Internet Research (www.aciri.org)

May 2001-December 2001

Research on network intrusion detection with Vern Paxson. Worked on formalism for attacking the "stepping stone" problem; developed a gdb-compatible debugger/tracer for the Bro Network Intrusion Detection System.

Software Engineer, Idiom, Inc., Waltham, MA

June 1999-May 2001

Worked on architecture, design, and development team for WorldServer® 2.0 and 3.0 products. Implemented patented linkage technology; designed and implemented database connectivity; co-designed patented Translation Memory system; designed next-generation workflow system; co-designed and implemented single sign-on security architecture; research on machine translation and efficient approximate matching.

Tabors, Caramanis and Assoc., Cambridge, MA (www.tca-us.com)

May 1998-May 1999

Designed and developed an electricity cost-optimization system for industrial consumers of electric power using mixed-integer programming (MIP) in C++, with a user interface in Visual Basic and rate data in Microsoft Access. Developed efficient approximation algorithm for solving the otherwise intractable MIP.

Selected Publications (full list at <http://www.umeshshankar.com/research>)

Umesh Shankar and Chris Karlof. "Doppelganger: Better Browser Privacy Without the Bother". To appear in *Proceedings of the 13th ACM Conference on Computer and Communications Security (CCS 2006)*, October 2006.

Umesh Shankar, Monica Chew, J. D. Tygar. "Side effects are not sufficient to authenticate software." In *Proceedings of the 13th USENIX Security Symposium*, August 2004.

Naveen Sastry, Umesh Shankar, David Wagner. "Secure verification of Location Claims." ACM Workshop on Wireless Security (WiSe 2003). September 19, 2003.

Umesh Shankar and Vern Paxson. "Active Mapping: Resisting NIDS Evasion Without Altering Traffic." Proceedings of the 2003 IEEE Symposium on Security and Privacy, May 2003.

Umesh Shankar, Kunal Talwar, Jeffrey S. Foster, and David Wagner. "Automated Detection of Format-String Vulnerabilities Using Type Qualifiers". In *Proceedings of the 10th USENIX Security Symposium*, August 2001.

Other Research Activities

External reviewer for IEEE Security and Privacy, USENIX Security, ACM CCS, other security conferences

Co-chair, Usenix HealthSec '11 Workshop

Member of IEEE, ACM, and Usenix

Honors and Awards

Awarded U.S. Patent No. 6,782,384, "Method of and system for splitting and/or merging content to facilitate content processing"

Several patents related to security and data protection pending

2001-2004 National Defense Science and Engineering Fellowship Recipient

Recipient of John Harvard Scholarship, 1996-97 and 1997-98; Recipient of Harvard College Scholarship, 1995-96