VirginiaTech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Computer Science Seminar Series, 2010
National Capital Region

SAFEST: Selectable Anonymity for Enabling Safer Telecommunications

Speaker: Dr. Micah Sherr
Department of Computer Science
Georgetown University

Friday, April 8th, 2011
1:00PM- 2:00PM, NVC 325

Abstract

A significant challenge of designing anonymity systems is the development of routing protocols that ensure privacy while providing an acceptable level of communication performance. While there have been several attempts at providing anonymity with the use of application-level overlay networks, existing solutions focus almost exclusively on maximizing anonymity, typically at the expense of performance.

In this talk, I present the design and implementation of SAFEST, an extensible anonymity architecture that allows applications to intelligently tradeoff between anonymity and performance. SAFEST produces anonymous paths that conform to multiple application-specified communication constraints (e.g., end-to-end bandwidth, latency, jitter, loss, etc.), enabling the anonymization of network applications with real-time requirements (for example, voice-over-IP and streaming video). Applying techniques from the distributed systems and databases communities, SAFEST utilizes a declarative policy language, permitting applications to concisely specify a myriad of routing requirements and protocols in a few lines of code.

Biography

Micah Sherr is an assistant professor of Computer Science at Georgetown University. His academic interests include privacy-preserving technologies, electronic voting, wiretap systems, and network security. Prior to arriving at Georgetown, he participated in two large-scale studies of electronic voting machine systems, and helped to disclose numerous architectural vulnerabilities in U.S. election systems. His current research examines the security properties of legally authorized wiretap (interception) systems and investigates methods for achieving scalable, high-performance anonymous routing. Micah received his B.S.E., M.S.E., and Ph.D. degrees from the University of Pennsylvania.