

SHISHIR NAGARAJA

William Gates Building
15 J J Thomson Avenue
Cambridge CB3 0FD
United Kingdom

Shishir.Nagaraja@cl.cam.ac.uk
www.cl.cam.ac.uk/users/sn275
Phone +44-1223-763565

EDUCATION

Ph.D. (Computer Science), University of Cambridge, St. John's College, UK, May 2008
Thesis: Robust Covert Networks
Supervisor: Prof. Ross J Anderson

B.E. (Computer Science), First Class with distinction
Bangalore University, PES Institute of Technology, India, 1999

RESEARCH INTERESTS

Anonymity and Traffic analysis, Robust Decentralized Networks, Censorship Resistance and Monitoring, Wireless Networks, Security Usability and Psychology of Information Security.

AWARDS AND DISTINCTIONS

Best Paper Award, Fourth European Workshop on Security and Privacy in Ad-hoc networks, 2007

Best Paper Award, BCS (British Computing Society) thesis competition, 2006

Gates Cambridge Scholarship, 2003

Distinction Award for Excellence in Academic Work, PES Institute of Technology, 1999

Best Undergraduate Project of the Year, Dept. of Computer Science, PES Institute of Technology, 1999

Technical Excellence Awards 2002 and 2003, Novell, Bangalore

Team Award for Quality Software Engineering of Security Components on Unix for eDirectory, Novell, Bangalore, 2000

PROGRAM COMMITTEES

- International Conference on Bio-Inspired Models of Network, Information, and Computing Systems, (BIONETICS) 2007, 2008
- IEEE Workshop on Security and QoS in Communication Networks, 2006
- Privacy Enhancing Technologies (PET) [surrogate reviewer], 2004
- The European Conference on Information Warfare and Security (ECIW) 2004, 2005

PUBLICATIONS

1. S. Nagaraja, *The Economics of Covert Community Detection and Hiding*, (to-appear) in the pre-proceedings of the WEIS (Workshop on the Economics of Information Security), Hanover, New Hampshire, USA, 2008.
2. S. Nagaraja and R. Anderson, *Dynamic topologies for robust scale-free networks*, In LNCS (to appear) Bio-Inspired Computing and Communication, P. Lio', J. Crowcroft, D. Verma and E. Yoneki (eds.), Springer-Verlag, December 2007.

3. S. Nagaraja, *Anonymity in the wild: Mixes on unstructured networks*, presented at the Symposium on Privacy Enhancing Technologies (PET 2007), In LNCS 4776, pp. 254--271, 2007, N. Borisov, and P. Golle (editors), Springer-Verlag, Heidelberg, Germany.
4. Tyler Moore, Jolyon Clulow, Ross Anderson and Shishir Nagaraja. *New Strategies for Revocation in Ad-Hoc Networks*, at the Fourth European Workshop on Security and Privacy in Ad Hoc and Sensor Networks (ESAS). July 2-3, 2007: Cambridge, England. In LNCS 4572, pp. 232--246, 2007, Springer-Verlag, Heidelberg, Germany.
5. R. Anderson, T. Moore, S. Nagaraja, A. Ozment, *Incentives and Information Security*, in *Algorithmic Game Theory*, N. Nisan, T. Roughgarden, E. Tardos, and V. Vazirani (editors), ISBN-13: 9780521872829, Cambridge University Press, 2007.
6. S. Nagaraja and R. Anderson, *Privacy Amplification with Social Networks*, presented at Security Protocols Workshop (SPW 2007), Brno, April 2007. in LNCS (to appear): Springer-Verlag, Heidelberg, Germany.
7. F. L. Wong, M. Lin, S. Nagaraja, I. Wassel and F. Stajano, *Evaluation Framework of Location Privacy of Wireless Mobile Systems with Arbitrary Beam Pattern*, in Proceedings of the Fifth Annual Conference on Communication Networks and Services Research (CNSR 2007), ISBN 0-7695-2835-X, pp 157—165, New Brunswick, Canada, May 2007.
8. S. Nagaraja, *On a dynamic topology of covert groups*, presented at Sunbelt (8th European Social Network Conference, Corfu, Greece, May 2007.
9. S. Nagaraja and R. Anderson, *the topology of covert conflict*, presented at WEIS (Workshop on the Economics of Information Security), Cambridge, England, UK, 2006.
10. Ravi Kiran UVS and Shishir Nagaraja, "An Algorithm to cluster directory users into user communities based on similarity in access", USPTO 6,996,577, June 2006.
11. Madhusudhana H S, Shishir Nagaraja and Aridaman Tripathi, "Security and Policy Integrity in multilateral authorization systems", USPTO 7,136,489, November 2006.
12. S. Nagaraja and R. Anderson, *the topology of covert conflict*, Technical Report 637, Computer Laboratory, University of Cambridge, 2005.
13. Shishir Nagaraja and M. S. Honnuduke, *Time-sync independent Kerberos Authentication Protocol* <draft-ietf-nagaraja-timesync-independent-kerberos-00.txt>, IETF, 2002.
14. Shishir Nagaraja and Madhusudhana H S, "Method and System for Amassed Authorization", USPTO, 2001.
15. Shishir Nagaraj, Natraj Sirisilla and H S Madhusudhana, "An adaptive method and system for user empowered management based on Dynamic Quorums", USPTO, November 2002.

TALKS (representative)

Invited talks

- Design Principles of Subversive Networks, University of Calgary (2008)
- Anonymity and Privacy, undergraduate course lectures, University of Cambridge (2007)
- topological attack and defense in large-scale networks, University of Ottawa, Ottawa (2007)
- Anonymity in the wild, University of Toronto, Toronto (2007)
- Anonymity on self-organized networks, Biowire, Cambridge (2007)
- *Conflict and The New Science of Networks*, Gates Colloquia, Cambridge (2005)
- *Anonymity in complex networks*, European Conference on Complex Systems, Oxford (2006)

Conference and Workshop talks (representative)

1. *Mixes on unstructured networks*, Privacy Enhancing Technologies, Cambridge (2007)
2. *Traffic analysis and complex networks*, Computer Laboratory, Cambridge (2007)
3. *Topology of Covert Conflict*, British Computing Society, Cambridge (2007)
4. *Conflict and Complex Networks*, Summer School Applied IT Security, Aachen (2005)
5. *Attacks and Defenses in scale-free networks*, Security Protocols Workshop, Cambridge (2005)
6. *An efficient and secure method of managing kerberos realms in a network using Directory databases*, Brainshare, Salt Lake City (2002)

Corporate workshops conducted

Security and Software Design, Bangalore (2001, 2002, 2003)

TEACHING INTERESTS

All core undergraduate and graduate computer science courses, and advanced courses in my research specialities. Courses of special interest are the following: Anonymity and Privacy, Advanced Traffic Analysis, Introduction to Security, Advanced Computer Security, Distributed Systems, Advanced Statistics, Distributed Databases, Operating Systems, Communications and Networking, Political Censorship and Cyber Law, Unix Tools and Software Engineering.

TEACHING EXPERIENCE

October 2007	Undergraduate lecture on Anonymity and Privacy
October 2003 – January 2006	Undergraduate Supervisor, University of Cambridge, Security – II (2003, 2004, 2005) Distributed Systems (2005)
April 1997 – October 1998	Teaching Assistant, PES Institute of Technology, C and System Software for a class of 30 students
May 1996 – February 1997	Tutored A-level students in Mathematics and Physics

EMPLOYMENT

OpenNet Initiative (Collaboration with University of Toronto), since August 2007, overall technical responsibility of censorship monitoring world-wide

Novell Research, India, Feb. 2000 – Aug. 2003, Research and software development in secure distributed databases.

November 1997-October 1999 Zillion Software Systems Ltd, Nov. 1997 – Oct. 1999, software development in authentication protocols.

PROGRAMMING SKILLS

- Languages – Python, C, R and Matlab
- Unix systems programming
- Build management, Software engineering and quality management processes

LANGUAGES

Written and spoken - English, Hindi

Working knowledge – Kannada and Telugu

OTHER INTERESTS AND PURSUITS

- Politics: I am very interested in the way conflict and cooperation play out in world politics, especially since network theory has much to do with the way various political groups behave and interact.
- Music: I play the Sitar, a classical Hindustani (North Indian) musical instrument. I collaborate and perform with musicians of different styles including Indian classical, jazz, flamenco and western classical string instrument players.
- Sports: I play tennis for the 3rd Men's team at the Cambridge LTC. I also actively pursue gymnastics and cycling tours.
- Photography: I also enjoy taking photographs mostly on the themes of politics and nature.