Paul Francis CV
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Max Planck Institute for Software Systems
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Research Area

Privacy in advertising and analytics, computer networks, overlay and P2P networks

Education

1975-80	Colorado State University, BSEE
1992-1994	Ph.D., University College London (UCL), Computer Science

Positions

9/13 -	Co-founder Aircloak
1/09 -	Director, Max Planck Institute for Software Systems
7/03 - 12/08	Associate Professor, Cornell University, Computer Science Dept.
1/03 - 7/03	Instructor, Cornell University Computer Science Dept.
1/01 - 1/03	Chief Scientist, Tahoe Networks
8/00 - 1/01	Chief Scientist, Fast Forward Networks
1/00 - 8/00	Senior Researcher, ACIRI (AT&T Center for Internet Research at ICSI)
1/94 - 1/00	Member Technical Staff, NTT Software Labs, Tokyo
1/90 - 1/94	Member Technical Staff at Bellcore, Morristown NJ
12/82 - 1/90	Member Technical Staff, MITRE Corp., McLean VA
6/80 - 12/82	PBX field repair engineer, AT&T, Denver CO

Publications

Thesis

1. Paul Francis, “Addressing in Internetwork Protocols,” University College London, Sept. 1994

Journal Publications

2. Paul Francis, S. Jamin, C. Jin, Y. Jin, A. Kurc, D. Raz, Y. Shavitt, L. Zhang “IDMaps: A Global Internet Host Distance Estimation Service,” IEEE/ACM Transactions on Networking, Oct. 2001

3. Paul Francis, "Comparison of Geographical and Provider-rooted Internet Addressing," Computer Networks and ISDN Systems 27(3)437-448, 1994 (selected paper from INET 94/JENC 5).

4. Paul Tsuchiya*, Tony Eng, "Extending the IP Internet Through Address Reuse," ACM SIGCOMM Computer Communications Review, 23(1):16-33, Jan. 1993

Refereed Conference Publications

5. Paul Francis, Sebastian Probst Eide, Reinhard Munz, "Diffix: High-Utility Database Anonymization", APF 2017

6. Alexey Reznichenko, Paul Francis, “Private-by-Design Advertising Meets the Real World,” ACM CCS 2014

7. Ruichuan Chen, Istemi Ekin Akkus, Paul Francis, "SplitX: High-Performance Private Analytics," ACM SIGCOMM 2013

8. Stevens Le Blond, David Choffnes, Wenxuan Zhou, Peter Druschel, Hitesh Ballani, Paul Francis, "Towards Efficient Traffic-analysis Resistant Anonymity Networks," ACM SIGCOMM 2013

9. Istemi Ekin Akkus, Ruichuan Chen, Michaela Hardt, Paul Francis, Johannes Gehrke, “Non-Tracking Web Analytics”, ACM Conference on Computer and Communications Security, CCS 2012

10. Ruichuan Chen, Alexey Reznichenko, Paul Francis, “Towards Statistical Queries over Distributed Private User Data,” USENIX Symposium on Networked Systems Design and Implementation, NSDI 2012

11. Zartash Afzal Uzmi, Markus Nebel, Ahsan Tariq, Sana Jawad, Ruichuan Chen, Aman Shaikh, Jia Wang, Paul Francis, SMALTA: Practical and Near-Optimal FIB Aggregation, ACM CONEXT 2011

12. Ruichuan Chen, Aman Shaikh, Jia Wang, Paul Francis, “Address-Based Route Reflection,” ACM CONEXT 2011

13. Alexey Reznichenko, Saikat Guha, Paul Francis, “Auctions in Do-Not-Track Compliant Internet Advertising”, ACM Conference on Computer and Communications Security, CCS 2011

14. Saikat Guha, Bin Cheng, Paul Francis, “Privad: Practical Privacy in Online Advertising,” USENIX Symposium on Networked Systems Design and Implementation, NSDI 2011

15. Saikat Guha, Alexey Reznichenko, Kevin Tang, Hamed Haddadi and Paul Francis, “Serving Ads from localhost for Performance, Privacy, and Profit,” In Proceedings of the 8th Workshop on Hot Topics in Networks HotNets ’09, 2009

16. Hamed Haddidi, Saikat Guha, Paul Francis, “Not All Adware is Badware: Towards Privacy-aware Advertising,” IFIP I3E 2009, Nancy, France, Sept. 2009

17. Hitesh Ballani, Paul Francis, Tuan Cao, Jia Wang, “Making Routers Last Longer with ViAggre,” ACM NSDI 2009, April 2009, Boston

18. Hitesh Ballani and Paul Francis, “Fault Management Using the CONMan Abstraction,” Infocom 2009, April 2009, Rio De Janeiro

19. Hitesh Ballani and Paul Francis, “Mitigating DNS DoS Attacks,” 15th ACM Conference on Computer and Communication Security, CCS 2008, Alexandria, VA, Oct. 2008

20. Vivek Vishnamurthy and Paul Francis, “On the Difficulty of Finding the Nearest Peer in P2P Systems,” ACM SIGCOMM Internet Measurement Conference, IMC 2008, Oct. 2008, Vouliagmeni, Greece

21. Changxi Zheng, Lusheng Ji, Dan Pei, Jia Wang, Paul Francis, "A Light-Weight Distributed Scheme for Detecting IP Prefix Hijacks in Realtime," ACM SIGCOMM 2007, August, 2007, Kyoto Japan

22. Hitesh Ballani, Paul Francis, Xinyang Zhang, "A Study of Prefix Hijacking and Interception in the Internet," ACM SIGCOMM 2007, August, 2007, Kyoto Japan

23. Hitesh Ballani, Paul Francis, "CONMan, a Step Towards Network Manageability," ACM SIGCOMM 2007, August, 2007, Kyoto Japan

24. Saikat Guha, Paul Francis, "An End-Middle-End Approach to Connection Establishment," ACM SIGCOMM 2007, August, 2007, Kyoto Japan

25. Vivek Vishnumurthy, Paul Francis, “A Comparison of Structured and Unstructured P2P Approaches to Heterogeneous Random Peer Selection,” USENIX, June 07

26. Vidhyashankar Venkatraman, Kaoru Yoshida, Paul Francis, "Chunkyspread: Heterogeneous Unstructured End System Multicast," The 14th IEEE International Conference on Network Protocols, Nov. 2006

27. Xinyang Zhang, Paul Francis, Jia Wang, Kaoru Yoshida, "Scaling Global IP Routing with the Core Router-Integrated Overlay," The 14th IEEE International Conference on Network Protocols, Nov. 2006

28. Hitesh Ballani, Paul Francis, Sylvia Ratnasamy, “A Measurement-based Deployment Proposal for IP Anycast,” Proceedings of Internet Measurement Conference (IMC), Rio de Janeiro, Oct 2006 (Best Paper Award)

29. Vivek Vishnumurthy, Paul Francis, “On Heterogeneous Overlay Construction and Random Node Selection in Unstructured P2P Networks,” Infocom 2006, April 2006, Barcelona

30. S. Guha and P. Francis. "Characterization and Measurement of TCP Traversal through NATs and Firewalls," Proceedings of Internet Measurement Conference (IMC), Berkeley, CA, Oct 2005.

31. Hitesh Ballani, Paul Francis, “Towards a Global IP Anycast Service,” SIGCOMM 2005, August, 2005, Philadelphia

32. Manpreet Singh, Prashant Pradhan, Paul Francis, “MPAT: Aggregate TCP Congestion Management as a Building Block for Internet QoS” 12th IEEE International Conference on Network Protocols (ICNP 2004), October 2004.

33. Paul Francis, Ramakrishna Gummadi, “IPNL: A NAT-Extended Internet Architecture,” SIGCOMM 2001, August, 2001, San Diego

34. Sylvia Ratnasamy, Paul Francis, Mark Handley, Richard Karp, and Scott Shenker, “A Scalable Content-Addressable Network,” SIGCOMM 2001, August, 2001, San Diego

35. Paul Francis, Sugih Jamin, Vern Paxson, Lixia Zhang, Daniel Gryniewicz, Yixin Jin, "An Architecture for a Global Internet Host Distance Estimation Service," Proceedings INFOCOM '99, New York City, March 1999.

36. Paul Francis, Susumu Shimizu, Takashi Kambayashi, and Shin-ya Sato, "A Framework for Multilingual Searching and Meta-information Extraction," Proceedings INET 97, Kuala Lumpur, June 1997.

37. Paul Francis, Shin-ya Sato, "Design of a Database and Cache Management Strategy for a Global Information Infrastructure," Proceedings of the Third International Symposium on Autonomous Decentralized Systems, pp. 283-290, April 1997.

38. Paul Francis, Susumu Shimizu, "De-Centralized Web Searching: An Alternative Paradigm", Proceedings 19th Pacific Telecommunications Conference, Honolulu, Jan. 1997.

39. Paul Francis, Takashi Kambayashi, Shin-ya Sato, Susumu Shimizu, "Ingrid: A Self-Configuring Information Navigation Infrastructure," Proceedings 4th International WWW Conference, Dec. 1995, pp. 519-538.

40. Paul Francis, Ramesh Govindan, "Flexible Routing and Addressing for a Next Generation IP," SIGCOMM 94, September 1994, London.

41. Paul Francis, "Comparison of Geographical and Provider-rooted Internet Addressing," Proceedings INET 94/JENC 5, Prague, June 1994.

42. Tony Ballardie, Paul Tsuchiya*, Jon Crowcroft, "Core Based Trees (CBT): An Architecture for Scalable Inter-Domain Multicast Routing," SIGCOMM 93, San Francisco, Sept. 1993. This paper won the Best Student Paper award.

43. Tony McAuley, Paul Francis, "Fast Routing Table Lookup using Content Addressable Memory (CAM)," INFOCOM 93, March 1993.

44. Paul Tsuchiya*, "Efficient Utilization of Contiguous Two-level Hierarchical Addresses," Proceedings IEEE Globecom 92, Orlando Florida, December 1992.

45. Paul Tsuchiya*, "Internet Routing Over Large Public Data Networks using Shortcuts," Proceedings SIGCOMM 92 Conference, Baltimore Maryland, August 1992.

46. Paul Tsuchiya*, "Efficient and Flexible Hierarchical Address Assignment," Proceedings INET 92, Kobe Japan, June 1992.

47. Paul Tsuchiya*, "Efficient and Robust Policy Routing using Multiple Hierarchical Addresses," proceedings SIGCOMM 91 Conference, Zurich, Switzerland, September 1991.

48. Paul Tsuchiya*, "On the Graceful Degradation of Routing Given Insufficient Resources," Proceedings 14th Conference on Local Computer Networks, Minneapolis Minnesota, October, 1989.

49. Paul Tsuchiya*, "Simulation of a Large Network Distributed Routing Algorithm using OPNET," Proceedings DCA/JDSSC Computer-based Modeling Symposium, September 1988.

50. Paul Tsuchiya*, "The Landmark Hierarchy: A New Hierarchy for Routing in Very Large Networks," Proceedings SIGCOMM 88 Conference, Stanford, California, August, 1988.

51. Paul Tsuchiya*, "Team-of-Gateways: Design and Implementation," Proceedings MILCOM '87, Washington DC, October, 1987.

Refereed Workshop Publications

52. Saikat Guha, Bin Cheng, Alexey Reznichenko, Hamed Haddadi, Paul Francis, “Serving Ads from `localhost` for Performance, Privacy, and Profit,” 8th ACM Workshop on Hot Topics in Networks, Hotnets 2009, New York, Oct. 2009

53. Hitesh Ballani, Paul Francis, Tuan Cao, and Jia Wang, “ViAggre: Making Routers Last Longer!”, 7th ACM Workshop on Hot Topics in Networks, Hotnets 2008, Calgary, Oct. 2008

54. Saikat Guha, Kevin Tang, Paul Francis, “NOYB: Privacy in Online Social Networks,” Proceedings of The First ACM SIGCOMM Workshop on Online Social Networks (WOSN '08), Seattle, Aug 2008

55. Tyler Steele, Vivek Vishnumurthy, and Paul Francis, “A Parameter-Free Load Balancing Mechanism for P2P Networks,” IPTPS 2008, Feb. 2008, Tampa Bay

56. Saikat Guha, Paul Francis, "Identity Trail: Covert Surveillance Using DNS," Workshop on Privacy Enhancing Technologies, PET 2007, June 2007, Ottawa Canada

57. Hitesh Ballani, Paul Francis, "A Simple Approach to DNS DoS Defense”, ACM Sigcomm Hotnets Workshop, Nov 2006

58. Hitesh Ballani, Paul Francis, "CONMan: Taking the Complexity out of Network Management," Sigcomm Internet Network Management Workshop, Sept. 2006, Pisa

59. Vidhyashankar Venkatraman, Paul Francis, “Chunkyspread: Multi-tree Unstructured End System Multicast,” IPTPS 2006, February 2006

60. Hitesh Ballani, Paul Francis, “Towards a deployable IP Anycast service,” First Workshop on Real, Large Distributed Systems (WORLDS '04), Dec 2004

61. Saikat Guha, Paul Francis, Takeda Yutaka, “NUTSS: A SIP-based Approach to UDP and TCP Network Connectivity,” Sigcomm Future Directions in Network Architecture (FDNA-04) Workshop, August 2004.

62. Paul Tsuchiya*, "An Architecture for Network-Layer Routing in OSI," SIGCOMM 87 Workshop, Stowe, Vermont, Computer Communication Review, Volume 17, Number 5, August, 1987.

Non-refereed Publications

63. Paul Francis, “Is the Internet Going NUTSS?,” IEEE Internet Computing, Nov-Dec 2003

64. Paul Francis, Yukata Ogawa, "Next-Generation Protocol for Internetworking," NTT R&D Journal, 43(9):41-50, 1994, in Japanese.

65. Paul Francis, "A Near-term Architecture for Deploying Pip," IEEE Network Magazine, 7(6):30-37, May 1993.

66. Paul Tsuchiya*, "Inter-domain Routing in the Internet," Connexions Interoperability Report, Volume 5, No. 1, January 1991.

67. Paul Tsuchiya*, "The Landmark Hierarchy: A New Hierarchy for Routing in Very Large Networks," Reprint Collection: Outstanding Papers on Key Topics in Computer Networking, ARTECH House, 1989 (reprinted from SIGCOMM 88).

68. Paul Tsuchiya*, "IS-IS Intra-Domain Routing," Connexions Interoperability Report, Volume 3, No. 8, August 1989.

69. Paul Tsuchiya*, "An Overview of OSI Routing," Connexions Interoperability Report, Volume 3, No. 8, August 1989.

70. Paul Tsuchiya*, “Landmark routing: Architecture, algorithms, and issues”, MTR-87W00174, The MITRE Corp., May 1988

71. Paul Tsuchiya*, "The Landmark Hierarchy: Description and Analysis," MTR-87W00152, McLean, VA: The MITRE Corp., June 1987

72. Paul Tsuchiya*, "Assured Destination Binding: A Technique for Dynamic Address Binding," MTR-87W00050, McLean, VA: The MITRE Corporation, March 1987

Poster Sessions and Workshops (without publications)

73. Saikat Guha, Manpreet Singh, “New Transport for High Delay-Bandwidth Product Networks”, Poster Session, SIGCOMM05

74. Vidhya Venkatraman, Paul Francis, "ChunkySpread Overlay Multicast," Poster Session, NSDI05

75. Paul Francis, “Self-Configuring Information Discovery Infrastructure, Workshop on Networked Information Retrieval, SIGIR 96, Zurich, Switzerland

76. Paul Tsuchiya*, "On the Generation of Connected General-Topology Networks with Control over Diameter," Poster Session, SIGMETRICS 88, Santa Fe, NM, May 1988.

Standards Publications

77. Paul Francis, Xiaohu Xu, “FIB Suppression with Virtual Aggregation,” IETF Draft draft-ietf-grow-va-00, revisions, and ancillary drafts, June 2008 – present

78. Paul Francis, Saikat Guha, Scott Brim, Melinda Shore, “An EME Signaling Protocol Design,”, IETF Draft draft-irtf-eme-francis-nutss-design-00.txt, Oct. 2007

79. Saikat Guha, Paul Francis, “Requirements for the End-Middle-End Research Group” IETF Draft draft-guha-emerg-requirements-00.txt, Jan 2007

80. P. Hoffman, S. Guha and P. Francis. "NAT Behavioral Requirements for Unicast TCP," Internet Draft: draft-hoffman-behave-tcp-04, July 2006.

81. K. Egevang, Paul Francis, "The IP Network Address Translator (Nat)," RFC 1631, May 1994.

82. Paul Francis, "Pip Header Processing," RFC 1622, May 1994.

83. Paul Francis, "Pip Near-term Architecture," RFC 1621, May 1994.

84. Jon Crowcroft, Paul Tsuchiya*, Tony Ballardie, "Core Based Trees - Scalable Multicast Routing," Internet Draft, July 1992.

85. Paul Tsuchiya*, "Mutual Encapsulation Considered Dangerous," RFC 1326, May 1992.

86. Paul Tsuchiya*, "On the Assignment of Subnet Numbers," RFC 1219, April 1991.

* My name was changed from Tsuchiya to Francis in 1993

Patents

1. "Electronic Dual Programmable Metronome," USA Patent 4,442,752, (1982)

2. "Landmark Hierarchy," USA Patent 4,823,111 (1988)

3. "Dynamic Address Binding," USA Patent 5,025,491 (1988)
4. "Alternate-path distance-vector routing ," USA patent 5,115,495 (1989)
5. "Multicast Routing using Core Base Trees," USA Patent 5,331,637 (1994)
6. “General internet method for routing packets in a communications network,” USA Patent 5,353,283 (1994)
7. ”Fast multilevel hierarchical routing table lookup using content addressable memory," USA Patent 5,386,413 (1994)
8. ”Method and system for shortcut routing over public data networks," USA Patent 5,583,996 (1994)
9. "Method for Distributed Information Searching," Japanese Patent 8-6091, in Japanese (1998)
10. "Information Navigation System using Clusterized Information Resource Topology," British Patent GB 2,297,179 (1998)
11. "Information Navigation System using Clusterized Information Resource Topology," USA Patent 5,761,418 (1998)
12. "Method for Distributed Creation of Multicast Trees", Japanese patent, number currently unknown. (1999)
13. “Private, Accountable, and Personalized Information Delivery in a Networked System”, USA Patent Application 12552549
14. “Preserving User Privacy in response to User Interactions,” USA Patent Application 2011/0252226
15. “Profiling Users in a Private Online System,” USA Patent Application 13/246,431
16. “Conducting Auctions in Private Online Advertising Systems,” USA Patent Application 13/246475
17. “Auction Modules in Private Online Advertising Systems,” USA Patent Application 13/246517

Lectures and Talks

Invited Talks (2003 – Present*)

1. “Cloaked Computing: Data anonymization without data destruction”, Telefonica Research, Nov. 2013
2. “Private User Analytics with Cloaked Computing,” Technicolor Research, June 2013
3. “Private User Analytics with Cloaked Computing,” University of Washington, April 2013
4. “Private User Analytics with Cloaked Computing,” MSR Redmond, April 2013
5. “The End of Tracking,” ENISA, March 2013

6. “Privacy through Cloaked Computing,” Dagstuhl Workshop on Decentralizing Systems for Privacy, Feb. 2013
7. “Private by Design: not because you have to, but because you want to,” ICCCN Panel, Privacy in the Age of Big Data, Munich, August 2012
8. “When Small Data is Better Data,” INTIMATE Workshop, Paris, June 2012
9. “Towards Statistical Queries over Distributed Private User Data, “ University of Kentucky, May 2012
10. “Eliminate Tracking,” U.C. Berkeley, May 2012
11. “Death, Taxes, Advertising, and Tracking,” Keynote CONEXT 2011, Tokyo, Dec. 2011
12. “Auctions in Private Advertising Systems,” MSR India, Bangalore, Nov. 2011
13. “Not all Adware is Badware,” Technicolor Research, Palo Alto, July 2011
14. “Privacy from Advertisers,” WiTAP Workshop, Stanford, July 2011
15. “Not all Adware is Badware,” Colorado University, Boulder, August 2010
16. “Not all Adware is Badware,” Distinguished Lecture, Kentucky University, Lexington, Nov. 2010
17. “Not all Adware is Badware,” Keynote ICCCN 2010, Zurich, August 2010
18. “Not all Adware is Badware,” Cambridge Univeristy, May 2010
19. “Not all Adware is Badware,” Telefonica Labs, Barcelona , Apr. 2010
20. “Virtual Aggregation”, NANOG Meeting, Detroit, Oct. 2009
21. “The Privad Private Advertising System”, Denver University, Oct. 2009
22. “The Privad Private Advertising System”, Eurecom, Nice, Sept. 2009
23. “The Privad Private Advertising System”, ETH, Sept. 2009
24. “A Dirty-Slate Approach to Scaling the Internet”, Keynote, Euromicro2009 SEAA, Patras, August 2009
25. “A Dirty-Slate Approach to Scaling the Internet”, Keynote, IFIP Networking 2009, Aachen, May 2009
26. “A Dirty-Slate Approach to Scaling the Internet”, KAIST, Korea, April 2009
27. “A Dirty-Slate Approach to Scaling the Internet”, Peking University, April 2009
28. “A Dirty-Slate Approach to Scaling the Internet”, Tsinghua University, April 2009
29. “A Dirty-Slate Approach to Scaling the Internet”, Tokyo University, April 2009
30. “A Dirty-Slate Approach to Scaling the Internet”, Seoul National Univeristy, April 2009
31. “A Dirty-Slate Approach to Scaling the Internet”, NTT, Tokyo, April 2009
32. “A Dirty-Slate Approach to Scaling the Internet”, Univ of Penn, Sept. 2008
33. “A Configuration-only Approach to FIB Reduction”, RIPE Meeting, May 2008, Berlin
34. “A Dirty-Slate Approach to Scaling the Internet”, Waterloo Univ., Apr. 2008
35. “A Dirty-Slate Approach to Scaling the Internet”, Univ of Rochester, Mar. 2008
36. “Scaling the Internet through Virtual Aggregation”, NANOG Meeting, Feb. 2008, San Jose
37. “Scaling the Internet through Virtual Aggregation”, Telefonica Labs, Barcelona, Jan 2008
38. “Scaling the Internet through Virtual Aggregation”, University College London, Jan 2008

39. “Scaling the Internet through Virtual Aggregation”, Microsoft Research, Cambridge, Jan 2008
40. “Scaling the Internet through Virtual Aggregation”, EPFL, Lausanne, Jan 2008
41. “Scaling the Internet through Virtual Aggregation”, Thomson Labs, Paris, Jan 2008
42. “Scaling the Internet through Virtual Aggregation”, Max Plank Institute for Software Systems, Kaiserslautern, Jan 2008
43. “Design of a Signaling Protocol for an End-Middle-End Architecture,” IRTF EME Research Group, IETF, Chicago, July 2007
44. “Small Routing Tables,” Cisco Routing Summit, Aug. 2006
45. “Trees versus meshes: Is the debate really over?”, P2P Streaming and IPTV Workshop, Pisa, Sept. 2006
46. “Network Issues in P2P,” First Keynote, IEEE Tenth International Workshop on Web Content Caching and Distribution, September, 2005
47. “Deep-4D: A New Architecture for Network Management”, Microsoft Summit on Self-Managing Networks, June 2005
48. "Firebreak: A DDoS Guard Deployment Architecture," IBM Research, Summer 2004
49. "Firebreak: A DDoS Guard Deployment Architecture," AT&T Research, Summer 2004
50. "Firebreak: A DDoS Guard Deployment Architecture," Sprint Research, Summer 2004
51. "Firebreak: A DDoS Guard Deployment Architecture," NTT Research (Tokyo), Summer 2004
52. "Firebreak: A DDoS Guard Deployment Architecture," Google, Summer 2004
53. "Firebreak: A DDoS Guard Deployment Architecture," IAI@Rome Summer Seminar Series, Summer 2004
54. “NAT and IPv6, We Meet at Last”. North American Network Operators Group 30, Miami (February 2004).
55. “NUTSS: the DeFacto Next-generation Internet Architecture”. IAI@Rome Summer Seminar Series (August 2003).

* Note: I didn’t catalogue invited talks or panels before arriving at Cornell in 2003.

Invited Panels (2003 – Present)

56. “Publishing in top venues: Smart work or secret handshakes?,”, CONEXT Student Workshop, Tokyo, Dec. 2011
57. “Behavioral Targeting and Profiling,” CPDP’11, Brussels, Jan. 2011
58. “Clean-Slate Network Design: How and Why?”, ACM CoNext 2007
59. “The Impact of P2P in Content Distribution,” Panelist, IEEE Tenth International Workshop on Web Content Caching and Distribution, September, 2005
60. IPv6 Workshop, U.S. Dept. of Commerce, July, 2004

Funding

Funded Research Proposals

Concerto CBMANET, DARPA, Subcontract to BAE Systems, (Cornell portion, $250, 000)

NSF NeTS-FIND: Collaborative Research: Towards Complexity-Oblivious Network Management, with Jay Lepreau (Co-PI) (Cornell portion, $300,000)

RapidTrace: Rapid Traceback of Cyber Attacks, ARDA/NSA, Subcontract to Telcordia (PI), 2005 (Cornell portion: $190,166)

QuickSilver: Middleware for Scalable Self-regenerative Systems, DARPA/AFRL, Co-PI, with *Ken Birman (PI)* and Johannes Gehrke. 2004 ($1,098,321)

Very Fine-grained Proximity Addressing, NSF. 2004 ($496,421)

Yoid End-System Multicast, DARPA, Co-PI, with Ramesh Govindan (PI), ISI, 2000 (Not sure of amount. I was at ACIRI at the time, and received no funds for this project)

PIP Next Generation IP, DARPA, with Ramesh Govindan (co-PI), 1994 (Don't recall the amount)

Corporate Gifts

End-Middle-End Internet Connection Establishment, from Cisco CRP, ($92,246)

Proxy IP Anycast Measurement and Deployment, from Cisco FIRST, 2006, ($206,465)

IP Anycast Deployment, from Sylvia Ratnasamy at Intel, 2005, ($20,000)

Next Generation NAT and Firewall Traversal, from Cisco CRP, 2005, ($99,930)

External Committees

Standards Committees

Co-chair, IETF Inter-domain Multicast Working Group (IDMR), 1994-1995

Chair, IETF PIP Next Generation IP Working Group, 1993

Initiator, IRTF End-Middle-End Research Group, 2006

Program Committees and Editorships

SIGCOMM 95, Program Committee

SIGCOMM 96, Program Committee

SIGCOMM 97, Program Committee

SIGCOMM FDNA Workshop 04, Program Committee

IEEE CCW 04, P2P session organizer

IEICE Transactions on Communications, Special Issue: Internet Technology V, Associate Editor

NSDI 05, Program Committee

WCW 05, Program Committee

SIGCOMM Internet Network Management (INM) Workshop 06, Program Committee, Panel Organizer

SIGCOMM ’07, Workshops and Tutorials Co-chair

GI’07 Program Committee

ICDCS’07 Program Committee

IPTPS ’08 Program Committee

SIGCOMM ’08 Heavy Program Committee

SIGCOMM Hotnets ’08 Program Committee

SIGCOMM Presto Workshop ’09 Program Committee

SIGCOMM WOSN Workshop ’09 Program Committee

ACM Hotnets ’11 Program Committee

USENIX NSDI ’11 Program Committee

WiTap ‘11 (Workshop on Internet Tracking, Advertising, and Privacy), Program Co-chair

ACM CONEXT SWID 2011 (Special Workshop on the Internet and Disasters), Program Co-chair

CCS 2011 Program Committee

APF 2012 (Annual Privacy Forum) Program Committee

SIGCOMM 2014 Program Committee Light

PETS 2014 Program Committee

Telefonica Data Transparency Lab Grants Program 2015

NSDI 2016 Program Committee

WWW 2017, Security and Privacy Track

Journal Reviewer

Elsevier Computer Networks Journal

World Enformatika Society International Journal of Computer Science

ACM/IEEE Transactions on Computer Systems (TOCS)

Other

Member, NLR (National Lambda Rail) Network Research Board, 2005 - 2006

Member, NSF FIND Planning Committee, 2006-2007

Member, NSF GENI Research Coordination Committee, 2006

University Activities

Teaching

Cornell:
- CS211: Object-Oriented Programming and Data Structures, Fall 2007
- CS414: Systems Programming and Operating Systems, Fall 2005
- CS419/519: Computer Networks, Spring 2004 - 2008
- CS514: Intermediate Computer Systems, Spring 2003, Fall 2003
- CS619: Advanced Computer Networks, Fall 2004, Fall 2006

Have guest lectured on computer networking for CS212 (Java Programming) and ORIE480 (Information Technology)

MPI-SWS:
- Distributed Systems, Winter 2014

Current PhD Students
- Istemi Ekin Akkus
- Reinhard Munz

Completed PhD Students

Cornell:
- Manpreet Singh, “End-to-End Techniques for Network Resource Management” (Summer 2006, Google)
- Xinyang Zhang (Admission Control in Internets)
- Vivek Vishnumurthy (Random Selecting and Proximity Addressing in P2P Networks)
- Vidhyashankar Venkatraman (Using Priority Queuing to Improve TCP for High Bandwidth-Delay Product Networks)
- Hitesh Ballani (Complexity Oblivious Network Management)

- Saikat Guha (Name-based Signaling-Based Approach to Network Connection Establishment)

MPI-SWS:

- Alexey Reznichenko (Private-by-Design Advertising and Analytics: From Theory to Practice)