

## Saikat Guha

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### EDUCATION

**Ph.D. in Computer Science**, Cornell University, Aug. 2009

Advisor: Paul Francis

Dissertation: “Chasing EME: Arguments for an End-Middle-End Internet”

**B.S. (*magna cum laudé*) in Computer Science**, Cornell University, May 2003

GPA: 3.96/4.0

transferred from Indian Institute of Technology (IIT), Delhi; CGPA: 8.9/10.0

### EMPLOYMENT

**Microsoft Research India**, Bangalore, India

- Senior Researcher: Sep. 2016 – present
- Researcher: Feb. 2010 – Aug. 2016

**Max Planck Institute for Software Systems**, Kaiserslautern, Germany

- Postdoctoral Researcher: Jul. 2009 – Feb. 2010

#### Research Internships

- Max Planck Institute for Software Systems (with Krishna Gummadi): Summer 2008
- Google Inc. (Security Group): Summer 2007
- Microsoft Research Cambridge (with Pablo Rodriguez): Summer 2006
- DoCoMo Labs USA (with Neil Daswani): Summer 2005

### PUBLICATIONS

#### Peer-Reviewed Conference Publications

- B. Viswanath et al. “Strength in Numbers: Robust Tamper Detection in Crowd Computations,” in *Proceedings of the ACM Conference on Online Social Networks (COSN)*, Palo Alto, CA, Nov 2015.
- B. Vattikonda, V. Dave, S. Guha, A. C. Snoeren, “Empirical Analysis of Search Advertising Strategies,” in *Proceedings of the 2015 Internet Measurement Conference (IMC)*, Tokyo, Japan, Oct 2015.
- B. Vattikonda, S. Kodipaka, H. Zhou, V. Dave, S. Guha, A. C. Snoeren, “Interpreting Advertiser Intent in Sponsored Search,” in *Proceedings of the 21st ACM Conference on Knowledge Discovery and Data Mining (KDD)*, Sydney, Australia, Aug 2015.
- P. Pearce et al. “Characterizing Large-Scale Click Fraud in ZeroAccess,” in *Proceedings of the 21st ACM Conference on Computer and Communications Security (CCS)*, Scottsdale, AZ, Nov 2014.
- B. Viswanath et al. “Towards Detecting Anomalous User Behavior in Online Social Networks,” in *Proceedings of the 23rd USENIX Security Symposium (USENIX Security)*, San Diego, CA, Aug 2014.
- S. Sen, S. Guha, A. Dutta, S. Rajamani, J. Tsai, and J. Wing, “Bootstrapping Privacy Compliance in Big Data Systems,” in *Proceedings of the 35th IEEE Symposium on Security and Privacy (Oakland)*, San Jose, CA, May 2014. (*Best Student Paper*)
- V. Dave, S. Guha, and Y. Zhang, “ViceROI: Catching Click-Spam in Search Ad Networks,” in *Proceedings of the 20th Conference on Computer and Communications Security (CCS)*, Berlin, Germany, Nov 2013.
- R. Bhaskar, S. Guha, S. Laxman, and P. Naldurg, “Verito: A Practical System for Transparency and Accountability in Virtual Economies,” in *Proceedings of the 20th Network and Distributed System Security Symposium (NDSS)*, San Diego, CA, Feb. 2013.

- A. Rai, R. Bhagwan, S. Guha, “Generalizing Resource Allocation for the Cloud,” in *Proceedings of the 3rd Symposium on Cloud Computing (SoCC)*, San Jose, CA, Oct. 2012.
- P. Athivarapu, R. Bhagwan, S. Guha, V. Navda, R. Ramjee, D. Arora, V. Padmanabhan, G. Varghese, “RadioJockey: Mining Program Execution to Optimize Cellular Radio Usage,” in *Proceedings of the 18th Annual International Conference on Mobile Computing and Networking (MobiCom)*, Istanbul, Turkey, Aug. 2012.
- V. Dave, S. Guha, and Y. Zhang, “Measuring and Fingerprinting Click-Spam in Online Ad Networks,” in *Proceedings of the 2012 Conference of the Special Interest Group on Data Communications (SIGCOMM)*, Helsinki, Finland, Aug. 2012.
- S. Guha, M. Jain, and V. Padmanabhan, “Koi: A Location-Privacy Platform for Smartphone Apps,” in *Proceedings of the 9th Symposium on Networked Systems Design and Implementation (NSDI)*, San Jose, CA, Apr. 2012.
- A. Reznichenko, S. Guha, and P. Francis, “Auctions in Do-Not-Track Compliant Internet Advertising,” in *Proceedings of the 18th ACM Conference on Computer and Communications Security (CCS)*, Chicago, IL, Oct. 2011.
- S. Guha, B. Cheng and P. Francis, “Privad: Practical Privacy in Online Advertising,” in *Proceedings of the 8th Symposium on Networked Systems Design and Implementation (NSDI)*, Boston, MA, Mar. 2011.
- S. Guha, B. Cheng and P. Francis, “Challenges in Measuring Online Advertising Systems,” in *Proceedings of the 2010 Internet Measurement Conference (IMC)*, Melbourne, Australia, Nov. 2010.
- M. Dischinger, M. Marcon, S. Guha, K. Gummadi, R. Mahajan and S. Saroiu, “Glasnost: Enabling End Users to Detect Traffic Differentiation,” in *Proceedings of the 7th Symposium on Networked Systems Design and Implementation (NSDI)*, San Jose, CA, Apr. 2010.
- S. Guha, J. Chandrasekhar, N. Taft and K. Papagiannaki, “How Healthy are Today’s Enterprise Networks?,” in *Proceedings of the 2008 Internet Measurement Conference (IMC)*, Vouliagmeni, Greece, Oct. 2008.
- S. Guha and P. Francis, “An End-Middle-End Approach to Connection Establishment,” in *Proceedings of the 2007 Conference of the Special Interest Group on Data Communication (SIGCOMM)*, Kyoto, Japan, Aug. 2007.
- S. Annapureddy, S. Guha, C. Gkantsidis, D. Gunawardena and P. Rodriguez. “Is High-Quality VoD Feasible using P2P Swarming?,” in *Proceedings of the 16th International World Wide Web Conference (WWW)*, Banff, Canada, May 2007.
- S. Guha and P. Francis, “Characterization and Measurement of TCP Traversal through NATs and Firewalls,” in *Proceedings of the 2005 Internet Measurement Conference (IMC)*, Berkeley, CA, Oct. 2005.
- S. Guha, R. Murty, and E. G. Sirer, “Sextant: A Unified Node and Event Localization Framework Using Non-Convex Constraints,” in *Proceedings of the 6th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Urbana-Champaign, IL, May 2005.
- C. Botev et al., “Supporting Workflow in a Course Management System,” in *Proceedings of the 2005 Technical Symposium of Computer Science Education (SIGCSE)*, St. Louis, MO, Feb. 2005.

#### Peer-Reviewed Workshop Publications

- V. Chandramouli, A. Chakraborty, V. Navda, S. Guha, V. Padmanabhan, R. Ramjee, “Insider: Towards Breaking Down Mobile App Silos,” in *Proceedings of the Conference on Timely Results in Operating Systems (TRIOS)*, Monterey, CA, Oct 2015.
- J. Rula, V. Navda, F. Bustamante, R. Bhagwan, S. Guha, “No ‘one-size fits all’: Towards a principled approach for incentives in mobile crowdsourcing,” in *Proceedings of the 15th Workshop on Mobile Computing Systems and Applications (HotMobile)*, Santa Barbara, CA, Feb. 2014.

- S. Guha, S. Kandula, “Act for Affordable Data Care,” in *Proceedings of the 11th Workshop on Hot Topics in Networks (HotNets)*, Redmond, WA, Oct. 2012.
- S. Guha, A. Reznichenko, K. Tang, H. Haddadi and P. Francis, “Serving Ads from localhost for Performance, Privacy, and Profit,” in *Proceedings of the 8th Workshop on Hot Topics in Networks (HotNets)*, New York, NY, Oct. 2009.
- S. Guha, K. Tang and P. Francis, “NOYB: Privacy in Online Social Networks,” in *Proceedings of the 1st ACM SIGCOMM Workshop on Online Social Networks (WOSN)*, Seattle, WA, Aug. 2008.
- B. Wong and S. Guha, “Quasar: A Probabilistic Publish-Subscribe System for Social Networks,” in *Proceedings of the 7th International Workshop on Peer-to-Peer Systems (IPTPS)*, Tampa Bay, FL, Feb. 2008.
- S. Guha and P. Francis, “Identity Trail: Covert Surveillance Using DNS,” in *Proceedings of the 7th International Symposium on Privacy Enhancing Technologies (PET)*, Ottawa, Canada, Jun. 2007.
- S. Annapureddy, S. Guha, C. Gkantsidis, D. Gunawardena and P. Rodriguez. “Exploring VoD in P2P Swarming Systems,” in *Proceedings of the 2007 INFOCOM Mini Symposiums*, Anchorage, AK, May 2007.
- S. Guha, N. Daswani, and R. Jain, “An experimental study of the skype peer-to-peer voip system,” in *Proceedings of the 5th International Workshop on Peer-to-Peer Systems (IPTPS)*, Santa Barbara, CA, Feb. 2006.
- S. Guha, Y. Takeda, and P. Francis, “NUTSS: A SIP-based Approach to UDP and TCP Network Connectivity,” in *Proceedings of the 2004 ACM SIGCOMM Workshop on Future Directions in Network Architecture*, Portland, OR, Aug. 2004, pp. 43–48.

#### Dissertation and Book Chapters

- S. Guha, “Chasing EME: Arguments for an End-Middle-End Internet,” Cornell University, Ph.D. Dissertation, Ithaca, NY, Aug. 2009.
- K. P. Birman, S. Guha, and R. Murty, *Advances in Pervasive Computing and Networking*. Kluwer Academic Press, Fall 2004, Chapter: Scalable, Self-Organizing Technology for Sensor Networks.

#### Patents and RFCs

- L. Sheth, M. Aksionkin, B. Asipov, S. Guha, R. Baradi, A. Sol, “US pending — Detecting Compliance Violations in Large Scale Data Repositories,” Filed Jul. 2016.
- V. Navda, R. Ramjee, D. Vageesh, S. Guha, V. Padmanabhan, “US 20170032138 — Automated Data Transfer from Mobile Application Silos to Authorized Third-Party Applications,” Filed Sep. 2015.
- S. Guha, R. Bhagwan, A. Rai, “US 20140025822 — Domain-Agnostic Resource Allocation Framework,” Filed Jul. 2012.
- S. Guha, R. Bhaskar, S. Laxman, and P. Naldurg, “US 20120317034 — Transparent Virtual Currency Using Verifiable Tokens,” Filed Jun. 2011.
- S. Guha, M. Jain, and V. Padmanabhan, “US 20120311035 — Privacy Preserving Matching Service,” Filed Jun. 2011.
- S. Guha, M. Jain, A. Jain, and V. Padmanabhan, “US 20120282945 — Privacy Preserving Platform,” Filed May 2011.
- P. Francis, and S. Guha, “US 20110252226 — Preserving User Privacy in Response to User Interactions,” Filed Apr. 2010.
- P. Francis, S. Guha and H. Haddadi, “US 20110055552 — Private, Accountable, and Personalized Information Delivery in a Networked System,” Filed Sep. 2009.
- P. Srisuresh, B. Ford, S. Sivakumar and S. Guha, “RFC 5508 — NAT Behavioral Requirements for ICMP,” Apr. 2009.

- S. Guha, K. Biswas, B. Ford, S. Sivakumar and P. Srisuresh, “RFC 5382 — NAT Behavioral Requirements for TCP,” Oct. 2008.

## PROFESSIONAL ACTIVITIES

### Ph.D. Thesis Committee

- Eslam Elnikety, *Max Planck Inst. for Software Systems*: Dec. 2017 expected
- Amit Datta, *Carnegie Mellon University*: Dec. 2017 expected
- Alexey Reznichenko, *Max Planck Inst. for Software Systems to Microsoft*: Apr. 2014
- Vacha Dave, *University of Texas at Austin to UCSD Post-Doc and Microsoft*: May 2013

### Organizing Committee

- International Workshop on Privacy Engineering (IWPE): 2017 (industry chair)
- Workshop on Internet Tracking, Advertising, and Privacy (WiTAP): 2011 (co-chair)
- Microsoft Research India Summer School on Security and Privacy: 2011 (co-chair)

### Technical Program Committee

- Internet Measurement Conference (IMC): 2017, 2014, 2013, 2010
- IEEE Security and Privacy (Oakland): 2017
- The World Wide Web Conference (WWW): 2017, 2013
- Usenix Security Symposium: 2016
- Symposium on Operating Systems Design and Implementation (OSDI): 2016
- Conference on emerging Networking EXperiments and Technologies (CoNEXT): 2015, 2014
- Asia-Pacific Workshop on Systems (APSys): 2015
- Symposium on Cloud Computing (SoCC): 2014
- Conference of the Special Interest Group on Data Communication (SIGCOMM): 2014
- European Conference on Computer Systems (EuroSys): 2014
- Symposium on Networked Systems Design and Implementation (NSDI): 2014
- International Conference on Distributed Computing Systems (ICDCS): 2013
- Passive and Active Measurement Conference (PAM): 2011
- Other: DAT 2016, P2P 2015, B2C(I)D 2015, ICCS 2012, PADE 2012, MPM 2012, PFLDNeT 2010, ICCCN 2009

### Journal Reviewer

- Computer Communication Review (CCR): 2015, 2012, 2010, 2008
- Transactions on Networking (TON): 2014, 2013, 2012, 2011, 2010
- Transactions on Information Forensics & Security (TIFS): 2013
- Journal of Machine Learning Research (JMLR): 2013
- Transactions on Information and System Security (TISSEC): 2012, 2010
- Transactions on Mobile Computing (TMC): 2012, 2011
- Other: COMNET 2009, TWEB 2009, COMCOM 2009, IJCS 2009

## PRESS COVERAGE

### Research

- On automating privacy compliance for big-data systems. *The Register, Gigaom, ACM TechNews, Campus Technology*, etc. (May. 2014)
- On catching click-fraud in online ad networks. *PCWorld* (Sep. 2013), *Computerworld* (Nov. 2012)
- On Facebook outing gay users to advertisers. *New York Times, CNN, Washington Post, MSNBC, Fox News, CBS, Wired News, Slashdot, ArsTechnica, Huffington Post, IDG News Service*, etc. (Oct. 2010)

### Profile

- On Indian academics reversing the brain drain trend and returning to India. *India Today* (Sep. 2013)
- MIT Technology Review TR35 Award to 35 Innovators Under 35. *Technology Review* (Aug. 2012)

## AWARDS AND HONORS

### Research

- Best Student Paper, “Bootstrapping Privacy Compliance in Big Data Systems,” *IEEE Symposium on Security and Privacy* (2014)

### Industry and Media

- Trustworthy Computing Award — Privacy, *Microsoft* (2013)
- TR35 — 35 Innovators Under 35, *Technology Review, MIT* (2012)

### Education

- Outstanding TA Award, *Dept. of Computer Science, Cornell Univ.* (Fall 2008, Fall 2005)
- Berman Prize, *Dept. of Engineering Communications, Cornell Univ.* (Fall 2001)
- Dean’s List, *College of Engineering, Cornell Univ.* (Spring 2003, Fall 2002, Spring 2002, Fall 2001)

## INVITED TALKS

### Visits and Summits

- “Really Catching Click-Fraud,” at *ETH Zurich, EPFL, INRIA, UIUC, UWisc Madison, UMich Ann-Arbor, Northwestern, Purdue* (Mar. 2015), *CMU, AT&T Labs, Princeton, UPenn, NYU, MPI-SWS* (Mar. 2014)
- “Measuring and Fingerprinting Click-Spam in Ad Networks,” at *Cornell* (Jul. 2013), *IIT Delhi, MPI-SWS, IIT Bombay* (Aug. 2012)
- “Crowd-sourcing Mobile Localization Tasks,” at *Georgia Tech., Boston Univ.* (Jul. 2013)
- “Koi: A Location-Privacy Platform for Smartphone Apps,” at *UTAustin* (Apr. 2012), *UWashington* (May 2012)
- “Serving Ads from localhost for Performance, Privacy, and Profit,” at *UCSD, UCLA, Harvard* (Mar. 2011), *National University of Singapore* (Oct. 2010), *Microsoft Research Silicon Valley* (Jul. 2010), *Telefonica I&D, Microsoft Research Cambridge* (Dec. 2009), *Microsoft Research Redmond, Electronic Frontier Foundation, Google Inc.* (Oct. 2009)
- “On End-Middle-End Connection Establishment in the Internet,” at *AT&T Labs Research* (Mar. 2009), *Telefonica I&D, Microsoft Research India* (Feb. 2009)
- “ShutUp: End-to-End Containment of Unwanted Traffic,” at *Telefonica I&D* (Jul. 2008)
- “An Endhost Perspective Into Today’s Enterprise Networks,” at *Thomson Labs* (Jul. 2008)
- “Using Off-Path and On-Path Signaling for Internet Security,” at *IRTF EME Research Group* (Jul. 2006)
- “NAT Behavioral Requirements for TCP,” at *IETF BEHAVE Working Group* (Jul. 2006, Mar. 2006, Nov. 2005)
- “Characterization and Measurement of TCP Traversal Through NATs and Firewalls,” at *Microsoft Research Redmond* (Nov. 2005)

### Conference and Workshop Talks

- “Act for Affordable Data Care,” at *HotNets 2012*
- “Koi: A Location-Privacy Platform for Smartphone Apps,” at *NSDI 2012*
- “Privad: Practical Privacy in Online Advertising,” at *NSDI 2011*
- “Challenges in Measuring Online Advertising Systems,” at *IMC 2010*
- “Serving Ads from localhost for Performance, Privacy, and Profit,” at *HotNets 2009*
- “How Healthy are Today’s Enterprise Networks?,” at *IMC 2008*
- “Dear Facebook, My Data is None of Your Business,” at *WOSN 2008*
- “Quasar: A Probabilistic Publish-Subscribe System for Social Networks,” at *IPTPS 2008*
- “NUTSS: An End-Middle-End Approach to Connection Establishment,” at *SIGCOMM 2007*
- “Identity Trail: Covert Surveillance Using DNS,” at *PET 2007*
- “An Experimental Study of the Skype Peer-to-Peer VoIP System,” at *IPTPS 2006*
- “Characterization and Measurement of TCP Traversal through NATs and Firewalls,” at *IMC 2005*
- “Sextant: A Unified Node and Event Localization Framework Using Non-Convex Constraints,” at *MobiHoc 2005*

## TEACHING EXPERIENCE

### **Instructor**, Cornell University

- Introduction to C: Fall 2008, Spring 2007, Fall 2006 (*student evaluation: 5/5*)
- Operating Systems Practicum: Fall 2005 (*outstanding TA award*)

### **Teaching Assistant**, Cornell University

- Computer Architecture: Fall 2008 (*student evaluation: 4.58/5, outstanding TA award*)
- Functional Programming and Data Structures: Spring 2004
- Intermediate Computer Systems: Fall 2003 (*student evaluation: 5/5*)

### **Undergraduate Consultant**, Cornell University

- Functional Programming and Data Structures: Spring 2003, Fall 2002, Spring 2002

## PARTICULARS

- Member of Association for Computing Machinery (ACM)
- Member of Advanced Computing Systems Association (USENIX)
- Member of Institute of Electrical and Electronics Engineers (IEEE)
- Citizen of India

## REFERENCES

Available upon request.