

Andreas Haeberlen

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Research Interests

Distributed systems, networking, security, privacy

Education

Ph.D. in Computer Science May 2009

Rice University
Advisor: Peter Druschel

Dipl. inform. in Computer Science April 2003

University of Karlsruhe, Germany
Advisor: Jochen Liedtke

Academic Positions Held

Associate Professor July 2016 – present

University of Pennsylvania, Philadelphia, PA
Department of Computer and Information Science

Raj and Neera Singh Assistant Professor January 2010 – June 2016

University of Pennsylvania, Philadelphia, PA
Department of Computer and Information Science

Postdoctoral Researcher May 2009 – December 2009

Max Planck Institute for Software Systems, Saarbrücken, Germany

Honors & Distinctions

- Lindback Award for Distinguished Teaching, University of Pennsylvania, 2019
- Ford Motor Company Award for Faculty Advising, University of Pennsylvania, 2016
- CAREER award, National Science Foundation, 2011
- Otto Hahn Medal (for outstanding scientific achievements), Max Planck Society, 2010
- SAP Award, University of Karlsruhe, 2003
- Graduated with Distinction, University of Karlsruhe, 2003
- Teaching Award, University of Karlsruhe, 2002
- Scholarship, IBM Germany, 2000 – 2003
- Jubilee State Foundation Award, University of Karlsruhe, 2000

Publications

Note: Acceptance rates are in parentheses; citation numbers are based on Google Scholar, and are shown for papers with at least ten citations. **Eleven papers have been cited more than 100 times.**

JOURNAL PUBLICATIONS

1. M. Zhao, W. Zhou, A. Gurney, **A. Haerberlen**, M. Sherr, and B. T. Loo. *Private and Verifiable Interdomain Routing Decisions*. IEEE/ACM Transactions on Networking (ToN), 24(2):1011–1024, Apr. 2016. 14 pages, 7 citations.
2. W. Zhou, S. Mapara, Y. Ren, Y. Li, **A. Haerberlen**, Z. Ives, B. T. Loo, and M. Sherr. *Distributed Time-Aware Provenance*. Proc. VLDB Endowment, 6(2):49–60, Dec. 2012. 12 pages, 43 citations.
3. **A. Haerberlen**. *A Case for the Accountable Cloud*. ACM SIGOPS Operating Systems Review, 44(2):52–57, Apr. 2010. 6 pages, **204 citations**.

PEER-REVIEWED CONFERENCE PUBLICATIONS

4. N. Gandhi, E. Roth, R. Gifford, L. T. X. Phan, and **A. Haerberlen**. *Bounded-Time Recovery for Distributed Real-Time Systems*. Proceedings of the 26th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS’20), Sydney, Australia, April 2020 (28%). 12 pages.
5. E. Roth, D. Noble, B. Hemenway Falk, and **A. Haerberlen**. *Honeycrisp: Large-scale Differentially Private Aggregation Without a Trusted Core*. Proceedings of the 27th ACM Symposium on Operating Systems Principles (SOSP’19), Huntsville, Ontario, October 2019 (13%). 14 pages.
6. H. Zhang, E. Roth, **A. Haerberlen**, B. C. Pierce, and A. Roth. *Fuzzi: A Three-Level Logic for Differential Privacy*. Proceedings of the 24th ACM SIGPLAN International Conference on Functional Programming (ICFP’19), Berlin, Germany, August 2019 (33%). 42 pages, 5 citations.
7. H. M. Demoulin, T. Vaidya, I. Pedisich, R. DiMaiolo, J. Qian, C. Shah, Y. Zhang, A. Chen, **A. Haerberlen**, B. T. Loo, L. T. X. Phan, M. Sherr, C. Shields, and W. Zhou. *DeDoS: Defusing DoS with Dispersion Oriented Software*. Proceedings of the 2018 Annual Computer Security Applications Conference (ACSAC’18), San Juan, Puerto Rico, December 2018 (20%). 10 pages, 5 citations.
8. D. Winograd-Cort, **A. Haerberlen**, A. Roth, and B. C. Pierce. *A Framework for Adaptive Differential Privacy*. Proceedings of the 22nd ACM SIGPLAN International Conference on Functional Programming (ICFP’17), Oxford, United Kingdom, September 2017 (35%). 24 pages, 25 citations.
9. A. Papadimitriou, A. Narayan, and **A. Haerberlen**. *DStress: Efficient Differentially Private Computations on Distributed Data*. Proceedings of the 12th European Conference on Computer Systems (EuroSys’17), Belgrade, Serbia, April 2017 (20%). 14 pages, 20 citations.
10. A. Chen, **A. Haerberlen**, W. Zhou, and B. T. Loo. *One Primitive to Diagnose Them All: Architectural Support for Internet Diagnostics*. Proceedings of the 12th European Conference on Computer Systems (EuroSys’17), Belgrade, Serbia, April 2017 (20%). 14 pages, 9 citations.
11. Y. Wu, A. Chen, **A. Haerberlen**, W. Zhou, and B. T. Loo. *Automated Bug Removal for Software-Defined Networks*. Proceedings of the 14th USENIX Symposium on Networked Systems Design and Implementation (NSDI’17), Boston, MA, March 2017 (18%). 15 pages, 22 citations.
12. A. Chen, Y. Wu, **A. Haerberlen**, B. T. Loo, and W. Zhou. *Data Provenance at Internet Scale: Architecture, Experiences, and the Road Ahead*. Proceedings of the 8th Conference on Innovative Data Systems Research (CIDR’17), Chaminade, CA, January 2017. 6 pages, 17 citations.

13. A. Papadimitriou, R. Bhagwan, N. Chandran, R. Ramjee, **A. Haeberlen**, H. Singh, A. Modi, and S. Badrinarayanan. *Big Data Analytics over Encrypted Datasets with Seabed*. Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI'16), Savannah, GA, November 2016 (18%). 12 pages, 54 citations.
14. A. Chen, Y. Wu, **A. Haeberlen**, W. Zhou, and B. T. Loo. *The Good, the Bad, and the Differences: Better Network Diagnostics with Differential Provenance*. Proceedings of the ACM SIGCOMM Conference (SIGCOMM'16), Florianópolis, Brazil, August 2016 (17%). 12 pages, 43 citations.
15. A. Narayan, A. Feldman, A. Papadimitriou, and **A. Haeberlen**. *Verifiable Differential Privacy*. Proceedings of the 10th European Conference on Computer Systems (EuroSys'15), Bordeaux, France, April 2015 (21%). 14 pages, 15 citations.
16. A. Chen, W. B. Moore, H. Xiao, **A. Haeberlen**, L. T. X. Phan, M. Sherr, and W. Zhou. *Detecting Covert Timing Channels with Time-Deterministic Replay*. Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI'14), Broomfield, CO, October 2014 (18%). 14 pages, 40 citations.
17. Y. Wu, M. Zhao, **A. Haeberlen**, W. Zhou, and B. T. Loo. *Diagnosing Missing Events in Distributed Systems with Negative Provenance*. Proceedings of the ACM SIGCOMM Conference (SIGCOMM'14), Chicago, IL, August 2014 (19%). 12 pages, 61 citations.
18. J. Hsu, M. Gaboardi, **A. Haeberlen**, S. Khanna, A. Narayan, B. C. Pierce, and A. Roth. *Differential Privacy: An Economic Method for Choosing Epsilon*. Proceedings of the IEEE Computer Security Foundations Symposium (CSF'14), Vienna, Austria, July 2014 (35%). 13 pages, **152 citations**.
19. M. Zhao, P. Aditya, A. Chen, Y. Lin, **A. Haeberlen**, P. Druschel, B. Maggs, W. Wishon, and M. Ponc. *Peer-Assisted Content Distribution in Akamai NetSession*. Proceedings of the 13th ACM SIGCOMM Internet Measurement Conference (IMC'13), Barcelona, Spain, October 2013 (24%). 12 pages, 95 citations.
20. J. Chang, P. Gebhard, **A. Haeberlen**, Z. Ives, I. Lee, O. Sokolsky, K. Venkatasubramanian. *TrustForge: Flexible Access Control for Collaborative Crowd-Sourced Environment*. Proceedings of the 11th Annual Conference on Privacy, Security, and Trust (PST'13), Tarragona, Spain, July 2013. 10 pages.
21. M. Gaboardi, **A. Haeberlen**, J. Hsu, A. Narayan, B. C. Pierce. *Linear Dependent Types for Differential Privacy*. Proceedings of the 40th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'13), Rome, Italy, January 2013 (18%). 14 pages, **133 citations**.
22. W. Zhou, S. Mapara, Y. Ren, Y. Li, **A. Haeberlen**, Z. Ives, B. T. Loo, and M. Sherr. *Distributed Time-Aware Provenance*. Presented at the 39th International Conference on Very Large Data Bases (VLDB'13), Trento, Italy, August 2013 (see journal publications). 12 pages, 43 citations.
23. A. Narayan and **A. Haeberlen**. *DJoin: Differentially Private Join Queries over Distributed Databases*. Proceedings of the 10th USENIX Symposium on Operating Systems Design and Implementation (OSDI'12), Hollywood, CA, October 2012 (12%). 14 pages, 78 citations.
24. M. Zhao, W. Zhou, A. Gurney, **A. Haeberlen**, M. Sherr, and B. T. Loo. *Private and Verifiable Interdomain Routing Decisions*. Proceedings of the ACM SIGCOMM Conference (SIGCOMM'12), Helsinki, Finland, August 2012 (14%). 12 pages, 46 citations.
25. P. Aditya, M. Zhao, Y. Lin, **A. Haeberlen**, P. Druschel, B. Maggs, and W. Wishon. *Reliable Client Accounting for Hybrid Content-Distribution Networks*. Proceedings of the 9th USENIX Symposium on Networked Systems Design and Implementation (NSDI'12), San Jose, CA, April 2012 (18%). 14 pages, 60 citations.
26. W. Zhou, Q. Fei, A. Narayan, **A. Haeberlen**, B. T. Loo, and M. Sherr. *Secure Network Provenance*. Proceedings of the 23rd ACM Symposium on Operating Systems Principles (SOSP'11), Cascais, Portugal, October 2011 (18%). 16 pages, **127 citations**. Extended version available as TR MS-CIS-11-14.

27. **A. Haeberlen**, B. C. Pierce, and A. Narayan. *Differential Privacy Under Fire*. Proceedings of the 20th USENIX Security Symposium (USENIX Security'11), San Francisco, CA, August 2011 (17%). 15 pages, **173 citations**.
28. **A. Haeberlen**, P. Aditya, R. Rodrigues, and P. Druschel. *Accountable Virtual Machines*. Proceedings of the 9th USENIX Symposium on Operating Systems Design and Implementation (OSDI'10), Vancouver, Canada, October 2010 (16%). 16 pages, **126 citations**.
29. **A. Haeberlen** and P. Kuznetsov. *The Fault Detection Problem*. Proceedings of the 13th International Conference on Principles of Distributed Systems (OPODIS'09), Nîmes, France, December 2009 (32%). 15 pages, 36 citations.
30. **A. Haeberlen**, I. Avramopoulos, J. Rexford, and P. Druschel. *NetReview: Detecting when Interdomain Routing Goes Wrong*. Proceedings of the 6th USENIX Symposium on Networked Systems Design and Implementation (NSDI'09), Boston, MA, April 2009 (20%). 16 pages, 72 citations.
31. M. Backes, P. Druschel, **A. Haeberlen**, and D. Unruh. *CSAR: A Practical and Provable Technique to Make Randomized Systems Accountable*. Proceedings of the 16th Annual Network & Distributed System Security Symposium (NDSS'09), San Diego, CA, February 2009 (12%). 13 pages, 49 citations. Extended version available as technical report MPI-SWS-2008-002.
32. M. Dischinger, A. Mislove, **A. Haeberlen**, and K. Gummadi. *Detecting BitTorrent Blocking*. Proceedings of the 8th ACM SIGCOMM Internet Measurement Conference (IMC'08), Vouliagmeni, Greece, October 2008 (17%). 6 pages, **132 citations**.
33. M. Dischinger, **A. Haeberlen**, I. Beschastnikh, K. Gummadi, and S. Saroiu. *SatelliteLab: Adding Heterogeneity to Planetary-Scale Network Testbeds*. Proceedings of the ACM SIGCOMM Conference (SIGCOMM'08), Seattle, WA, August 2008 (13%). 12 pages, 47 citations.
34. **A. Haeberlen**, P. Kuznetsov, and P. Druschel. *PeerReview: Practical Accountability for Distributed Systems*. Proceedings of the 21st ACM Symposium on Operating Systems Principles (SOSP'07), Stevenson, WA, October 2007 (19%). 14 pages, **412 citations**. Extended version available as technical report MPI-SWS-2007-003.
35. M. Dischinger, **A. Haeberlen**, K. Gummadi, and S. Saroiu. *Characterizing Residential Broadband Networks*. Proceedings of the 7th ACM SIGCOMM Internet Measurement Conference (IMC'07), San Diego, CA, October 2007 (29%). 14 pages, **430 citations**.
36. **A. Haeberlen**, M. Dischinger, K. Gummadi, and S. Saroiu. *Monarch: A Tool to Emulate Transport Protocol Flows over the Internet at Large*. Proceedings of the 6th ACM SIGCOMM Internet Measurement Conference (IMC'06), Rio de Janeiro, Brazil, October 2006 (22%). 14 pages, 28 citations.
37. B.-G. Chun, F. Dabek, **A. Haeberlen**, E. Sit, H. Weatherspoon, M. F. Kaashoek, J. Kubiawicz, and R. Morris. *Efficient Replica Maintenance for Distributed Storage Systems*. Proceedings of the 3rd USENIX Symposium on Networked Systems Design and Implementation (NSDI'06), San Jose, CA, May 2006 (25%). 14 pages, **338 citations**.
38. A. Mislove, A. Post, **A. Haeberlen**, and P. Druschel. *Experiences in Building and Operating ePOST, a Reliable Peer-to-Peer Application*. Proceedings of the 1st European Conference on Computer Systems (EuroSys'06), Leuven, Belgium, April 2006 (20%). 13 pages, 64 citations.
39. **A. Haeberlen**, A. Mislove, and P. Druschel. *Glacier: Highly Durable, Decentralized Storage Despite Massive Correlated Failures*. Proceedings of the 2nd USENIX Symposium on Networked Systems Design and Implementation (NSDI'05), Boston, MA, May 2005 (22%). 16 pages, **337 citations**.
40. **A. Haeberlen**, E. Flannery, A. Ladd, A. Rudys, D. Wallach, and L. Kavraki. *Practical Robust Localization over Large-Scale 802.11 Wireless Networks*. Proceedings of the 10th ACM International Conference on Mobile Computing and Networking (MOBICOM'04), Philadelphia, PA, September 2004 (8%). 13 pages, **858 citations**.

41. **A. Haeberlen** and K. Elphinstone. *User-level Management of Kernel Memory*. Proceedings of the 8th Asia-Pacific Computer Systems Architecture Conference (ACSAC'03), Aizu-Waikamatsu City, Japan, September 2003. 13 pages, 31 citations.

PEER-REVIEWED WORKSHOP PUBLICATIONS

42. T. Yang, R. Gifford, **A. Haeberlen**, and L. T. X. Phan. *The Synchronous Data Center*. Proceedings of the 17th Workshop on Hot Topics in Operating Systems (HotOS'19), Bertinoro, Italy, May 2019 (24%). 7 pages.
43. M. Xu, A. Papadimitriou, A. Feldman, and **A. Haeberlen**. *Using Differential Privacy to Efficiently Mitigate Side Channels in Distributed Analytics*. Proceedings of the European Workshop on System Security (EuroSec'18), Porto, Portugal, April 2018 (42%). 6 pages, 6 citations.
44. A. Chen, A. Sriraman, T. Vaidya, Y. Zhang, **A. Haeberlen**, B. T. Loo, L. T. X. Phan, M. Sherr, C. Shields, and W. Zhou. *Dispersing Asymmetric DDoS Attacks with SplitStack*. Proceedings of the 15th ACM Workshop on Hot Topics in Networks (HotNets'16), Atlanta, GA, November 2016 (28%). 7 pages, 12 citations.
45. H. Nguyen, B. Acharya, R. Ivanov, **A. Haeberlen**, L. T. X. Phan, O. Sokolsky, J. Walker, J. Weimer, C. W. Hanson, and I. Lee. *Cloud-Based Secure Logger for Medical Devices*. Proceedings of the 1st International Workshop on Security, Privacy, and Trustworthiness in Medical Cyber-Physical Systems (MedSPT'16), Washington, DC, June 2016. 7 pages, 20 citations.
46. Y. Wu, A. Chen, **A. Haeberlen**, W. Zhou, and B. T. Loo. *Automated Network Repair with Meta Provenance*. Proceedings of the 14th ACM Workshop on Hot Topics in Networks (HotNets'15), Philadelphia, PA, November 2015 (18%). 7 pages, 16 citations.
47. A. Chen, Y. Wu, **A. Haeberlen**, W. Zhou, and B. T. Loo. *Differential Provenance: Better Network Diagnostics with Reference Events*. Proceedings of the 14th ACM Workshop on Hot Topics in Networks (HotNets'15), Philadelphia, PA, November 2015 (18%). 7 pages, 10 citations.
48. A. Chen and **A. Haeberlen**. *PRISM: Private Retrieval of the Internet's Sensitive Metadata*. Proceedings of the 8th Workshop on Cyber Security Experimentation and Test (CSET'15), Washington, DC, August 2015 (31%). 8 pages.
49. A. Chen, H. Xiao, **A. Haeberlen**, and L. T. X. Phan. *Fault Tolerance and the Five-Second Rule*. Proceedings of the 15th Workshop on Hot Topics in Operating Systems (HotOS'15), Ittingen, Switzerland, May 2015 (32%). 7 pages, 9 citations.
50. A. Narayan, A. Papadimitriou, and **A. Haeberlen**. *Compute Globally, Act Locally: Protecting Federated Systems from Systemic Threats*. Proceedings of the 10th Workshop on Hot Topics in System Dependability (HotDep'14), Broomfield, CO, October 2014. 6 pages, 7 citations.
51. A. Bates, K. Butler, **A. Haeberlen**, M. Sherr, and W. Zhou. *Let SDN Be Your Eyes: Secure Forensics in Data Center Networks*. Proceedings of the NDSS Workshop on Security of Emerging Network Technologies (SENT'14), San Diego, CA, February 2014. 6 pages, 68 citations.
52. Y. Wu, **A. Haeberlen**, W. Zhou, and B. T. Loo. *Answering Why-Not Queries in Software-Defined Networks with Negative Provenance*. Proceedings of the 12th ACM Workshop on Hot Topics in Networks (HotNets'13), College Park, MD, November 2013 (23%). 6 pages, 21 citations.
53. A. Papadimitriou, M. Zhao, and **A. Haeberlen**. *Towards Privacy-Preserving Fault Detection*. Proceedings of the 9th Workshop on Hot Topics in System Dependability (HotDep'13), Farmington, PA, November 2013 (52%). 6 pages, 11 citations.
54. L. D'Antoni, M. Gaboardi, E. Gallego, **A. Haeberlen**, and B. C. Pierce. *Sensitivity Analysis using Type-Based Constraints*. Proceedings of the Workshop on Functional Programming Concepts in Domain-Specific Languages (FPCDSL'13), Boston, MA, September 2013. 6 pages, 11 citations.

55. Z. Ives, **A. Haeberlen**, T. Feng, and W. Gatterbauer. *Querying Provenance for Ranking and Recommending*. Proceedings of the 4th USENIX Workshop on the Theory and Practice of Provenance (TaPP'12), Boston, MA, June 2012. 4 pages, 9 citations.
56. A. Gurney, **A. Haeberlen**, W. Zhou, M. Sherr, and B. T. Loo. *Having Your Cake and Eating It Too: Routing Security with Privacy Protections*. Proceedings of the 10th ACM Workshop on Hot Topics in Networks (HotNets'11), Cambridge, MA, November 2011 (20%). 6 pages, 20 citations.
57. A. Aviv and **A. Haeberlen**. *Challenges in Experimenting with Botnet Detection Systems*. Proceedings of the 4th Workshop on Cyber Security Experimentation and Test (CSET'11), San Francisco, CA, August 2011 (39%). 8 pages, 72 citations.
58. W. Zhou, L. Ding, **A. Haeberlen**, Z. Ives, and B. T. Loo. *TAP: Time-Aware Provenance for Distributed Systems*. Proceedings of the 3rd USENIX Workshop on the Theory and Practice of Provenance (TaPP'11), Heraklion, Greece, June 2011. 6 pages, 15 citations.
59. W. Zhou, Q. Fei, **A. Haeberlen**, B. T. Loo, and M. Sherr. *Towards Self-Explaining Networks*. Proceedings of the NEBULA Workshop, Philadelphia, PA, June 2011. 6 pages.
60. J. Reed, A. Aviv, D. Wagner, **A. Haeberlen**, B. C. Pierce, and J. Smith. *Differential Privacy for Collaborative Security*. Proceedings of the European Workshop on System Security (EuroSec'10), Paris, France, April 2010 (33%). 7 pages, 41 citations.
61. **A. Haeberlen**, R. Rodrigues, K. Gummadi, and P. Druschel. *Pretty Good Packet Authentication*. Proceedings of the 4th Workshop on Hot Topics in System Dependability (HotDep'08), San Diego, CA, December 2008 (42%). 5 pages, 17 citations.
62. **A. Haeberlen**, P. Kuznetsov, and P. Druschel. *The Case for Byzantine Fault Detection*. Proceedings of the 2nd Workshop on Hot Topics in System Dependability (HotDep'06), Seattle, WA, November 2006 (27%). 6 pages, 75 citations. Extended version available as technical report MPI-SWS-2006-001.
63. E. Sit, **A. Haeberlen**, F. Dabek, B.-G. Chun, H. Weatherspoon, R. Morris, and M. F. Kaashoek. *Proactive Replication for Data Durability*. Proceedings of the 5th International Workshop on Peer-to-Peer Systems (IPTPS'06), Santa Barbara, CA, February 2006 (27%). 6 pages, **112 citations**.
64. **A. Haeberlen**, A. Mislove, A. Post, and P. Druschel. *Fallacies in Evaluating Decentralized Systems*. Proceedings of the 5th International Workshop on Peer-to-Peer Systems (IPTPS'06), Santa Barbara, CA, February 2006 (27%). 6 pages, 47 citations.
65. **A. Haeberlen**, J. Liedtke, Y. Park, L. Reuther, and V. Uhlig. *Stub-Code Performance is Becoming Important*. Proceedings of the 1st Workshop on Industrial Experiences with Systems Software (WIESS'00), San Diego, CA, October 2000. 8 pages, 39 citations.

BOOK CHAPTERS

66. T. Anderson, K. Birman, R. Broberg, M. Caesar, D. Comer, C. Cotton, M. Freedman, **A. Haeberlen**, Z. Ives, A. Krishnamurthy, W. Lehr, B. T. Loo, D. Mazières, A. Nicolosi, J. Smith, I. Stoica, R. van Renesse, M. Walfish, H. Weatherspoon, and C. Yoo. *The NEBULA Future Internet Architecture*. In: A. Galis and A. Gavras (Ed.), *Future Internet Assembly 2013*. Lecture Notes in Computer Science (LNCS) 7858, Springer, 2013. 11 pages, 47 citations.
67. A. Mislove, **A. Haeberlen**, A. Post, and P. Druschel. *ePOST*. In: R. Steinmetz and K. Wehrle (Ed.), *Peer-to-Peer Systems and Applications*. Lecture Notes in Computer Science (LNCS) 3485, Springer, 2005. 22 pages.

TECHNICAL REPORTS

68. M. Xu, A. Papadimitriou, **A. Haeberlen**, and A. Feldman. *Hermetic: Privacy-preserving distributed analytics without (most) side channels*. University of Pennsylvania Department of Computer and Information Science Technical Report MS-CIS-19-01, January 2019. 21 pages.
69. **A. Haeberlen**, P. Fonseca, R. Rodrigues, and P. Druschel. *Fighting Cybercrime with Packet Attestation*. Max Planck Institute for Software Systems Technical Report MPI-SWS-2011-002, July 2011. 14 pages.
70. W. Zhou, **A. Haeberlen**, B. T. Loo, and M. Sherr. *Tracking Adversarial Behavior in Distributed Systems with Secure Network Provenance*. University of Pennsylvania Department of Computer and Information Science Technical Report MS-CIS-10-28, August 2010. 6 pages.
71. **A. Haeberlen**, J. Hoyer, A. Mislove, and P. Druschel. *Consistent Key Mapping in Structured Overlays*. Rice University Department of Computer Science Technical Report TR05-456, August 2005. 6 pages, 23 citations.
72. V. Uhlig, U. Dannowski, E. Skoglund, **A. Haeberlen**, and G. Heiser. *Performance of Address-Space Multiplexing on the Pentium*. University of Karlsruhe Department of Computer Science Technical Report 2002-1, May 2002. 15 pages, 31 citations.

OTHER PUBLICATIONS

73. A. Chen, C. Chen, L. K. Loh, Y. Wu, **A. Haeberlen**, L. Jia, B. T. Loo, and W. Zhou. *Data Center Diagnostics with Network Provenance*. Invited paper; appeared in IEEE Data Engineering Bulletin 41(1):74–85, 2018. 12 pages.
74. H. Demoulin, T. Vaidya, I. Pedisich, N. Sultana, Y. Zhang, A. Chen, **A. Haeberlen**, B. T. Loo, L. T. X. Phan, M. Sherr, C. Shields, and W. Zhou. *A Demonstration of the DeDoS Platform for Defusing Asymmetric DDoS Attacks in Data Centers*. Demo; appeared in Proceedings of the ACM SIGCOMM Conference (SIGCOMM’17), Los Angeles, CA, August 2017 (36%). 3 pages.
75. S. Badrinarayanan, R. Bhagwan, N. Chandran, **A. Haeberlen**, A. Modi, A. Papadimitriou, R. Ramjee, H. Singh, and N. Sood. *Seabed: Big Data Analytics over Encrypted Datasets*. Demo; appeared in Proceedings of the 9th International Conference on Communication Systems & Networks (COMSNETS’17), Bengaluru, India, January 2017. 2 pages.
76. **A. Haeberlen**, M. Zhao, W. Zhou, A. Gurney, M. Sherr, and B. T. Loo. *Privacy-Preserving Collaborative Verification Protocols*. Invited paper; appeared in Proceedings of the 6th Workshop on Large-Scale Distributed Systems and Middleware (LADIS’12), Madeira, Portugal, July 2012. 2 pages.
77. W. Zhou, Q. Fei, S. Sun, T. Tao, **A. Haeberlen**, Z. Ives, B. T. Loo, and M. Sherr. *NetTrails: A Declarative Platform for Maintaining and Querying Provenance in Distributed Systems*. Demo; appeared in Proceedings of the ACM SIGMOD International Conference on Management of Data (SIGMOD’11), Athens, Greece, June 2011. 3 pages, 16 citations.
78. U. Dannowski, K. Elphinstone, J. Liedtke, G. Liefländer, E. Skoglund, V. Uhlig, C. Ceelen, **A. Haeberlen**, and M. Völz. *The L4Ka Vision*. White paper, Apr. 2001. 8 pages, 25 citations.

POSTERS

79. Y. Wu, **A. Haeberlen**, W. Zhou, and B. T. Loo. *Answering Why-Not Queries in Software-Defined Networks with Negative Provenance*. Presented at the 24th ACM Symposium on Operating Systems Principles (SOSP’13), Farmington, PA, November 2013.
80. A. Papadimitriou, M. Zhao, and **A. Haeberlen**. *Fault Detection with Privacy Guarantees*. Presented at the 24th ACM Symposium on Operating Systems Principles (SOSP’13), Farmington, PA, November

- 2013.
81. A. Chen and **A. Haeberlen**. *PRISM: Private Retrieval of the Internet's Sensitive Metadata*. Presented at the 24th ACM Symposium on Operating Systems Principles (SOSP'13), Farmington, PA, November 2013.
 82. M. Zhao, W. Zhou, A. Gurney, **A. Haeberlen**, M. Sherr, and B. T. Loo. *Collaborative Verification with Privacy Guarantees*. Presented at the 10th USENIX Symposium on Operating Systems Design and Implementation (OSDI'12), Hollywood, CA, October 2012.
 83. W. Zhou, Q. Fei, A. Narayan, **A. Haeberlen**, B. T. Loo, and M. Sherr. *Secure Forensics Without Trusted Components*. Presented at the 8th USENIX Symposium on Networked Systems Design and Implementation (NSDI'11), Boston, MA, April 2011.
 84. **A. Haeberlen**, R. Rodrigues, and P. Druschel. *Accountable Virtual Machines*. Presented at the 5th USENIX Symposium on Networked Systems Design and Implementation (NSDI'08), San Francisco, CA, April 2008.
 85. **A. Haeberlen**, M. Dischinger, I. Beschastnikh, and K. Gummadi. *SatelliteLab: Adding Heterogeneity to Planetary-Scale Testbeds*. Presented at the 21st ACM Symposium on Operating Systems Principles (SOSP'07), Stevenson, WA, October 2007.
 86. M. Dischinger, **A. Haeberlen**, K. Gummadi, and S. Saroiu. *Residential Broadband Networks: Characteristics and Implications*. Presented at the 4th USENIX Symposium on Networked Systems Design and Implementation (NSDI'07), Cambridge, MA, April 2007.

THESES

87. *Accountability for Distributed Systems*
Ph.D. Thesis, Rice University, April 2009.
88. *Managing Kernel Memory Resources from User Level*
Diplomarbeit, University of Karlsruhe, April 2003.
89. *Using Platform-Specific Optimizations in Stub-Code Generation*
Studienarbeit, University of Karlsruhe, July 2002.

Grants

CURRENT GRANTS

1. **A. Haeberlen** (PI). *Privacy-Preserving Distributed Analytics at Scale*. Google Research Award, \$80,000, 02/2020–01/2021.
2. L. T. X. Phan, **A. Haeberlen**, B. T. Loo, W. Zhou. *Diagnosing Datacenter Networks with Quantitative Provenance*. NSF Networking Technology and Systems (NeTS) program, \$1,200,000 (Penn: \$856k), 09/2017–09/2021.
3. J. Smith, **A. Haeberlen**, L. T. X. Phan, B. T. Loo, A. DeHon. *ProNet: Programmable Networks Enabled by Fast In-Path Analytics*. DARPA Dispersed Computing (DCOMP) program, \$12,599,857 (Penn: \$1.7M), 02/2017–04/2021.
4. L. T. X. Phan (PI), **A. Haeberlen**, and B. T. Loo. *Network Functions Virtualization With Timing Guarantees*. NSF Networking Technology and Systems (NeTS) program, \$1,100,000, 09/2016–08/2020.
5. B. T. Loo (PI), **A. Haeberlen**, L. T. X. Phan, M. Sherr, C. Shields, and W. Zhou. *DeDOS: Declarative Dispersion-Oriented Software*. DARPA Extreme DDoS Defense (XD3) program, \$3,500,000, 06/2016–06/2020.

6. A. Roth (PI), **A. Haeberlen**, and B. C. Pierce. *Distributed Differential Privacy*. NSF Secure and Trustworthy Cyberspace (SaTC) program, \$1,200,000, 09/2015–08/2020.

PAST GRANTS

7. S. Kannan, **A. Haeberlen**, V. Tannen. *Provenance with Privacy and Reliability in Federated Distributed Systems*. NSF Algorithms in the Field (AitF) program, \$309,900, 09/2017–09/2021.
8. P. Yushkevich (PI), H. Wang, D. Wolk, K. Davis, R. Gorman, J. Detre, B. Avants, R. Shinohara, W. Witschey, and **A. Haeberlen**. *Adaptive Large-Scale Framework for Automatic Biometrical Image Segmentation*. NIH R01 program, \$3,517,000, 07/2014–06/2019.
9. I. Lee (PI), **A. Haeberlen**, N. Heninger, G. Pappas, O. Sokolsky, K. Shin, and M. Pajic. *Security and Privacy-Aware Cyber-Physical Systems*. NSF/Intel Partnership on Cyber-Physical Systems Security and Privacy (CPS-Security) program, \$2,242,000, 09/2015–06/2018.
10. S. Beitzel (PI), S. Alexander, A. Ghetie, G. Frazier, B. Williams, J. Smith, **A. Haeberlen**, B. T. Loo, and N. Duffield. *DEDUCE: Distributed Enclave Defense Using Configurable Edges*. DARPA Edge-Directed Cyber Technologies for Reliable Mission Control (EdgeCT) program, \$1,173,000, 07/2015–06/2018.
11. **A. Haeberlen** (PI). *Evidence in Federated Distributed Systems*. NSF CAREER award, \$508,636, 09/2011–01/2018.
12. **A. Haeberlen** (PI), Z. Ives, B. T. Loo, M. Sherr. *Tracking Adversarial Behavior in Distributed Systems with Secure Networked Provenance*. NSF Trustworthy Computing (TC) program, \$845,000, 09/2011–08/2017.
13. B. C. Pierce (PI), **A. Haeberlen**, and A. Roth. *Putting Differential Privacy to Work*. NSF Trustworthy Computing (TC) program, \$1,199,950, 03/2011–02/2017.
14. **A. Haeberlen** (PI). *Private Queries on Distributed Data Sets*. Google Research Award, \$68,000, 02/2015–01/2016.
15. A. DeHon (PI), J. Smith, M. Blaze, S. Zdancewic, **A. Haeberlen**, and B. C. Pierce. *Safety on Untrusted Network Devices*. DARPA Mission-oriented Resilient Clouds (MRC) program, \$771,000, 09/2011–09/2015.
16. J. Smith (PI), B. C. Pierce, **A. Haeberlen**, and S. Davidson. *Networks Opposing Botnets (NoBot) Phase II*. ONR, \$1,800,000, 07/2012–06/2015.
17. **A. Haeberlen**. Gift from Facebook, \$25,000, 06/2013.
18. K. Birman, M. Caesar, D. Comer, M. Freedman, **A. Haeberlen**, Z. Ives, A. Krishnamurthy, W. Lehr, B. T. Loo, D. Mazières, A. Nicolosi, R. van Renesse, J. Smith (PI), I. Stoica, M. Walfish, H. Weatherspoon, and C. Yoo. *A Future Internet That Supports Trustworthy Cloud Computing*. NSF Future Internet Architecture (FIA) program, \$1,724,000, 09/2010–06/2015.
19. O. Sokolsky (PI), I. Lee, Z. Ives, and **A. Haeberlen**. *TrustForge: Flexible Access Control for VehicleForge Collaborative Environment*. DARPA Vehicleforge.mil program, \$1,026,000, 08/2010–08/2013.
20. Z. Ives (PI), S. Guha, **A. Haeberlen**, M. Kearns, and A. Roth. *Enabling the Next Generation of Highly Dynamic, Inter-Domain Data-Centric Markets and Systems*. Gift from Google, \$433,333, 07/2013–12/2014.

Presentations

INVITED TALKS

Distributed Differential Privacy

1. IvyPlus Security Conference, Oct. 2019

2. Philomathean Society, Nov. 2019
Accountability for Distributed Systems
3. Temple University, Oct. 2016
4. University of Maryland, College Park, Apr. 2016
5. Max Planck Institute for Software Systems, Apr. 2016
6. University of Southern California, Mar. 2016
7. Washington University in St. Louis, Mar. 2016
8. Cornell University, Feb. 2015
9. Rice University, Nov. 2014
10. UT Austin, Nov. 2014
Differentially Private Join Queries over Distributed Databases
11. DIMACS Workshop on Differential Privacy, Oct. 2012
Privacy and Forensics in Federated Distributed Systems
12. Max Planck Institute for Software Systems, Jun. 2010
Accountability for Distributed Systems
13. Duke University, Jun. 2010
The Accountable Cloud
14. InfraGard / Deloitte Cloud & Virtualization Symposium, Apr. 2010
Accountability for Distributed Systems
15. Microsoft Research Redmond, May 2009
16. ETH Zürich, Apr. 2009
17. Microsoft Research Silicon Valley, Apr. 2009
18. Microsoft Research Cambridge, Apr. 2009
19. New York University, Apr. 2009
20. Cornell University, Mar. 2009
21. University of Pennsylvania, Mar. 2009
22. UCLA, Mar. 2009
23. Deutsche Telekom Laboratories Berlin, Nov. 2008
PeerReview: Detecting Faulty Behavior in Distributed Systems
24. Dresden University of Technology, Dresden, Germany, Jan. 2006
25. UCSD, Sep. 2006
Paging the Kernel
26. University of New South Wales, Sydney, Australia, Oct. 2002
27. Dresden University of Technology, Dresden, Germany, Nov. 2002

CONFERENCE AND WORKSHOP PRESENTATIONS

28. *The Synchronous Data Center*
HotOS Workshop, May 2019
29. *Fault Tolerance and the Five-Second Rule*
HotOS Workshop, May 2015
30. *The Enemy Within*
NSF Workshop on Cyber-Physical Systems, Mar. 2013
31. *Privacy-Preserving Collaborative Verification Protocols*
LADIS Workshop, Jul. 2012
32. *Having your Cake and Eating it too: Routing Security with Privacy Protections*
HotNets workshop, Nov. 2011

33. *Differential Privacy Unver Fire*
USENIX Security Symposium, Aug. 2011
34. *Towards Self-Explaining Networks*
NEBULA workshop, Jul. 2011
35. *Accountable Virtual Machines*
USENIX Symposium on Operating Systems Design and Implementation (OSDI'10), Oct. 2010
36. *The Fault Detection Problem*
Workshop on Theory and Practice of Byzantine Fault Tolerance (BFTW³), Sep. 2009
37. *NetReview: Detecting When Interdomain Routing Goes Wrong*
USENIX Symposium on Networked Systems Design and Implementation (NSDI'09), Apr. 2009
38. *SatelliteLab: Adding Heterogeneity to Planetary-Scale Network Testbeds*
ACM SIGCOMM Conference, Aug. 2008
39. *PeerReview: Practical Accountability for Distributed Systems*
ACM Symposium on Operating Systems Principles (SOSP'07), Oct. 2007
40. *Practical Accountability for Distributed Systems*
Workshop on Future Directions in Distributed Computing (FuDiCo III), Jun. 2007
41. *The Case for Byzantine Fault Detection*
Workshop on Hot Topics in System Dependability (HotDep'06), Nov. 2006
42. *Monarch: A Tool to Emulate Transport Protocol Flows over the Internet at Large*
ACM/USENIX Internet Measurement Conference (IMC'06), Oct. 2006
43. *Fallacies in Evaluating Decentralized Systems*
International Workshop on Peer-to-Peer Systems (IPTPS'06), Feb. 2006
44. *Glacier: Highly Durable, Decentralized Storage Despite Massive Correlated Failures*
USENIX Symposium on Networked Systems Design and Implementation (NSDI'06), May 2005
45. *Practical Robust Localization over Large-Scale 802.11 Wireless Networks*
ACM International Conference on Mobile Computing and Networking (MOBICOM'04), Sep. 2004
46. *User-level Management of Kernel Memory*
Asia-Pacific Computer Systems Architecture Conference (ACSAC'03), Sep. 2003
47. *Stub-Code Performance is Becoming Important*
Workshop on Industrial Experiences with Systems Software (WIESS'00), Oct. 2000

Teaching Experience

Instructor, University of Pennsylvania

- NETS 212: Scalable and Cloud Computing (Fall 2019)
147 students. Course quality: 2.33/4, Instructor: 2.39/4.
- NETS 212: Scalable and Cloud Computing (Fall 2018)
166 students. Course quality: 2.67/4, Instructor: 2.84/4.
- CIS 455/555: Internet and Web Systems (Spring 2018)
103 students. Course quality: 3.17/4, Instructor: 3.14/4.
- NETS 212: Scalable and Cloud Computing (Fall 2017)
118 students. Course quality: 2.94/4, Instructor: 3.09/4.
- CIS 455/555: Internet and Web Systems (Spring 2017)
89 students. Course quality: 3.33/4, Instructor: 3.39/4.

- NETS 212: Scalable and Cloud Computing (Fall 2016)
85 students. Course quality: 2.94/4, Instructor: 3.00/4.
- CIS 455/555: Internet and Web Systems (Spring 2016)
89 students. Course quality: 3.29/4, Instructor: 3.13/4.
- NETS 212: Scalable and Cloud Computing (Fall 2015)
73 students. Course quality: 2.88/4, Instructor: 2.84/4.
- CIS 800/004: Beyond MapReduce (Spring 2015)
14 students. Course quality: 3.67/4, Instructor: 3.67/4.
- CIS 455/555: Internet and Web Systems (Spring 2014)
87 students. Course quality: 3.57/4, Instructor: 3.61/4.
- NETS 212: Scalable and Cloud Computing (Fall 2013)
45 students. Course quality: 3.41/4, Instructor: 3.26/4.
- CIS 455/555: Internet and Web Systems (Spring 2013)
92 students. Course quality: 3.45/4, Instructor: 3.29/4.
- MKSE 212: Scalable and Cloud Computing (Fall 2012)
43 students. Course quality: 2.92/4, Instructor: 3.16/4.
- CIS 455/555: Internet and Web Systems (Spring 2012)
88 students. Course quality: 3.45/4, Instructor: 3.19/4.
- MKSE 212: Scalable and Cloud Computing (Fall 2011)
31 students. Course quality: 2.85/4, Instructor: 2.81/4.
- CIS 455/555: Internet and Web Systems (Spring 2011)
51 students. Course quality: 3.14/4, Instructor: 3.17/4.
- CIS 399: Scalable and Cloud Computing (Fall 2010)
11 students. Course quality: 3.36/4, Instructor: 3.45/5.
- CIS 700/003: Distributed Systems meet Social Networks (Spring 2010)
16 students. Course quality: 3.27/4, Instructor: 3.53/4.

Teaching Assistant, Rice University

- COMP 421: Operating Systems (Spring 2005)
- COMP 529: Computer Networks (Fall 2004)
- COMP 421: Operating Systems (Spring 2004)

Teaching Assistant, University of Karlsruhe

- System Architecture (Fall 2002)
- Systems Design and Implementation (Summer 2002)
- System Architecture (Fall 2001)
- Proseminar Linux Internals (Fall 2001)
- Proseminar Linux Internals (Fall 2000)
- Proseminar Inside Windows NT (Summer 2000)

Advisees

DOCTORAL ADVISEES

- Edo Roth
Since Fall 2017

- Yang Wu (co-advised with Jonathan M. Smith)
Thesis: “Extending Provenance for Deep Diagnosis of Distributed Systems” (2017)
First employment: Research Scientist, Facebook.
- Ang Chen
Thesis: “Secure Diagnostics and Forensics with Network Provenance” (2017)
First employment: Assistant professor, Rice University.
- Antonis Papadimitriou
Thesis: “Distributed Query Execution with Strong Privacy Guarantees” (2017)
First employment: Security Researcher, Intel Labs.
- Mingchen Zhao
Thesis: “Accountability in Distributed Systems with Incomplete Information” (2016)
First employment: Research Scientist, Facebook.
- Arjun Narayan
Thesis: “Distributed Differential Privacy and Applications” (2015)
First employment: Cockroach Labs.

DOCTORAL THESIS COMMITTEES

- Alexander Marder (2019)
- Nan Zheng (2019)
- Nikos Vasilakis (2018)
- Ben Karel (2017)
- Chen Chen (2017)
- Behnaz Arzani (2017)
- Bongho Kim (2016)
- Mengmeng Liu (2016)
- Shaohui Wang (2015)
- Yifei Yuan (2016)
- Zhuoyao Zhang (2014)
- Andrew West (2013)
- Wenchao Zhou (2012)
- Svilen Mihaylov (2012)
- Sudeepa Roy (2012)
- Aaron Bohannon (2012)
- Nicholas Taylor (2010)

MASTER’S ADVISEES

- Dhruv Arya
Thesis: “Zodiac: A Control Plane for Nebula” (2013)
First employment: LinkedIn
- Prakashkumar Thiagarajan
Thesis: “Malware Detection with Accountability” (2012)
First employment: Oracle

MASTER'S THESIS COMMITTEES

- Hongbo Zhang (2013)
- Ruchir Jha (2010)

UNDERGRADUATE PROJECTS

- Tanvir Ahmed, EAS 499 (2017)
- Ian Sibner, Quanze Chen, Evelyn Yeung, and David Xu, Senior Design (2016)
- Dhruvad Bhardwaj and Shreshth Khilani, Senior Design (2016)
- Shray Kapoor, EAS 499 (2015)
- Yang Lv, Independent Study (2015)
- Wing Li and Connie Yuan, EAS 499 (2014)
- Daniel Alfi, EAS 499 (2014)
- Joseph Chan, EAS 499 (2013)
- Anna Thalia Parks, EAS 499 (2013)
- Xiaofan Tong, Independent Study (2013)
- Roashan Ayene, EAS 499 (2012)
- Willy Huang, EAS 499 (2012)
- Xiaojun Feng, Independent Study (2012)
- Kirti Patodia and Danielle Jabin, EAS 499 (2011)
- Levi Thornton, VLST 395 (2011)
- Justin Broglie, CIS 497 (2010)
- Lauren Frazier, Independent Study (2010)

ADVISEE AWARDS

- Yang Wu: Morris and Dorothy Rubinoff Award, 2018
- Mingchen Zhao: Microsoft Research PhD fellowship, 2013
- Dhruv Arya: Departmental Master's Thesis Award 2012–2013
- Arjun Narayan: Yahoo! Key Scientific Challenges award, 2012
- Lauren Frazier: 2nd place in NSBE National Poster competition, 2010

Service

DEPARTMENTAL SERVICE

- Undergraduate Chair, Computer and Information Science, 2018 – present
- Academic Performance Committee, 2019 – present
- CIS Curriculum committee, 2019 – present
- Freshman experience committee, 2019
- Faculty search committee, 2018/2019
- Co-director and Undergraduate Curriculum Chair, Singh Program on Networked & Social Systems Engineering (NETS), 2016 – present
- Infrastructure committee, 2018
- Faculty search committee, 2017/2018

- Department chair selection committee, 2017
- Faculty search committee, 2016/2017
- Master's admissions committee, 2016/2017
- Master's admissions committee, 2015/2016
- Faculty search committee (Systems), 2015
- Faculty search committee (Systems), 2014
- PlanetLab maintainer, 2014 – present
- Department chair selection committee, 2013
- Faculty search committee (Systems), 2013
- Faculty search committee (Systems), 2012
- Lecturer search committee, 2012
- PhD admissions committee, 2012
- PhD admissions committee, 2011
- PhD admissions committee, 2010

WORKSHOP ORGANIZER

- Co-Chair, 7th Workshop on Hot Topics in System Dependability (HotDep), 2011

PROGRAM COMMITTEE MEMBER

- IEEE Symposium on Security and Privacy (Oakland): 2021, 2020, 2018, 2017, 2016
- ACM Symposium on Operating Systems Design and Implementation (OSDI): 2018, 2014
- ACM Symposium on Operating Systems Principles (SOSP): 2017
- ACM SIGCOMM Conference (SIGCOMM): 2017
- USENIX Symposium on Networked Systems Design and Implementation (NSDI): 2021, 2019, 2015
- ACM European Conference on Computer Systems (EuroSys): 2018, 2016, 2015, 2012, 2011
- ACM Conference on Computer and Communications Security (CCS): 2017
- ACM Symposium on Principles of Distributed Computing (PODC): 2017
- ACM Internet Measurement Conference (IMC): 2016, 2014
- USENIX Annual Technical Conference (ATC): 2020, 2016, 2012
- ACM Symposium on Cloud Computing (SoCC): 2015, 2013
- ACM Workshop on Hot Topics in Networks (HotNets): 2016
- ACM International Systems and Storage Conference (SYSTOR): 2020, 2016
- International Conference on Distributed Computing Systems (ICDCS): 2016, 2014
- USENIX Workshop on Cyber Security Experimentation and Test (CSET): 2016
- Workshop on Foundations of Computer Security (FCS): 2016
- Workshop on Hot Topics in System Dependability (HotDep): 2014, 2013, 2010
- ACM Cloud Computing Security Workshop (CCSW): 2014, 2013
- IRIS Student Workshop: 2004

GRANT PROPOSAL REVIEWER/PANELIST

- NSF: 10 panels, 3 ad-hoc reviews
- External Reviewer, National Fund for Scientific & Technological Development, Chile

- External Reviewer, Agency for Innovation by Science and Technology, Belgium
- External Reviewer, German Research Foundation (DFG)

OTHER COMMITTEES

- Awards chair, ACM Symposium on SDN Research, 2020
- AISP Technical Advisory Group, 2017
- IMC Best Paper Award committee, 2016
- AISP Technology & Data Security Expert Panel, 2016
- SIGOPS Dennis M. Ritchie Award selection committee, 2015
- OSDI poster committee, 2014
- EuroSys Best Paper Award committee, 2012
- SOSIP Poster/WiP committee, 2011

JOURNAL REVIEWER

- ACM Computing Surveys (CSUR)
- ACM Computer Communications Review (CCR)
- IEEE Transactions on Dependable and Secure Computing (TDSC)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Transactions on Computers (TC)

Patents

1. A. Chen, H. Xiao, W. Moore, **A. Haeberlen**, L. T. X. Phan, M. Sherr, and W. Zhou. *Methods, Systems, and Computer Readable Media for Detecting Covert Timing Channels*. U.S. patent no. 10437993; issued Oct. 8, 2019. 46 pages.
2. **A. Haeberlen**, A. Ladd, D. Wallach, E. Flannery, A. Rudys, and L. Kavraki. *System and Method for Localization over a Wireless Network*. U.S. patent application 11/180,030; filed Jul. 12, 2005. 11 pages, 47 citations.
3. **A. Haeberlen**. *Method and System for Packet-Level Routing*. U.S. patent application 10/456,651; filed Jun. 6, 2003. 11 pages.