Ion Stoica

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Division of Computer Science
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Areas of Special Interests

Distributed computer systems and networking. System architectures, modeling and performance analysis.

Education

Polytechnic University Bucharest	Computer Science & Control Engineering	M.S. (1989)
Carnegie Mellon University	Electrical & Computer Engineering	Ph.D. (2000)

Appointments and Professional Experience

2006-present, Associate Professor, EECS Department, University of California, Berkeley
2000-2006, Assistant Professor, EECS Department, University of California, Berkeley
2006-present, Chief Technology Officer, Conviva Networks

Prizes and Honors

- CoNext Rising Star Award (2007)
- Alfred P. Sloan Fellowship (2003)
- Presidential Early Career Award for Scientists and Engineers (PECASE) (2002)
- ACM Doctoral Dissertation Award (2001)
- Okawa Foundation Fellowship (2001)

Best Paper Awards

ICDCS'07; NSDI'04; USENIX'06 Annual Technical Conference (2006); IEEE 2004 William R. Bennett Prize (for best paper in ACM/IEEE Transactions on Networking, 2003)

Students and Postdocs

- Jayanth Kannan, Ph.D 2009 (Google)
- Dilip Joseph, Ph.D 2009 (Conviva Networks)
- Brighten Godfrey, Ph.D 2008 (University of Illinois at Urbana Champaign)
- Rodrigo Fonseca, Ph.D 2008 (Brown University)
- Ryan Huebsch, Ph.D 2008 (Conviva Networks; co-advised with Joe Hellerstein)
- Ananth Rajagopala-Rao, Ph.D 2007 (Vudu Networks)
- Matthew Caesar, Ph.D 2007 (University of Illinois at Urbana Champaign; co-advised with Randy Katz)
- Karthik Lakshminarayanan, Ph.D 2007 (Google)
- Boon Thau Loo, Ph.D 2006 (University of Pennsylvania, 2007 ACM SIGMOD Dissertation Award; co-advised with Joe Hellerstein)
- Dennis Geels, Ph.D 2006 (Google)
- Lakshminarayanan Subramanian, Ph.D 2005, (New York University; co-advised with Randy Katz and Scott Shenker)

• Shelly Zhuang, Ph.D 2005, (Draper Fisher Jurvetson; co-advised with Randy Katz)
• Sylvia Ratnasamy, Ph.D 2002, (UC Berkeley from fall 2010, now at Intel Research Lab, Berkeley; co-advised with Scott Shenker)
• Kevin Lai, Postdoc, 2003, (HP Labs)

Professional Activities

• PC co-chair: ACM SIGCOMM 2008, IWQoS 2003, IPTPS 2003
• PC member: SOSP 2007, ACM SIGCOMM 2002, 2004, 2005; A CM SIGMOD 2004; NSDI 2004, IEEE Infocom 2005, IPTPS 2002, 2005, 2010; IWQoS 2001, 2002; HotNets-I 2005, 2002, Hot-Interconnects 2002, 2003.

Refereed Publications

Books

Ion Stoica, "Stateless Core: A Scalable Approach for Quality of Service in the Internet", *Lecture Notes in Computer Science*, Vol. 2979, 2004. (Winning Thesis of the 2001 ACM Doctoral Dissertation Competition)

Journals

Karthik Lakshminarayanan, Daniel Adkins, Adrian Perrig, and Ion Stoica, "Securing User-controlled Routing Infrastructures", IEEE/ACM Transactions on Networking, Vol. 16, Issue 8, June 2008, pp 549–561.

Karthik Lakshminarayanan and Ananth Rao and Ion Stoica and Scott Shenker, "End-host controlled multicast routing", in Computer Networks: The International Journal of Computer and Telecommunications Networking, Vol. 50, Issue 6, pp 807–825, April 2006.

Ion Stoica, Daniel Adkins, Shelley Zhaung, Scott Shenker, and Sonesh Surana, "Internet Indirection Infrastructure", IEEE/ACM Transactions on Networking, Vol. 12, No. 2, pp. 205–218, April 2004.

Hari Balakrishnan, M. F. Kaashoek, David Karger, Robert Morris, Ion Stoica, "Looking Up Data in P2P Systems", Communications of the ACM, Vol. 46, No. 2, February 2003, pp. 43–48, .

Lakshminarayanan Subramanian, Ion Stoica, Hari Balakrishnan, and Randy H. Katz, "OverQoS: offering Internet QoS using overlays", Computer Communication Review, Vol. 33, Issue 1, 2003, pp 11–16.

Thomas E. Anderson, Scott Shenker, Ion Stoica, David Wetherall: Design guidelines for robust Internet protocols. Computer Communication Review 33(1): 125-130 (2003)

Ion Stoica, Robert Morris, David Liben-Nowell, David R. Karger, M. Frans Kaashoek, Frank Dabek, Hari Balakrishnan, "Chord: A Scalable Peer-to-peer Lookup Protocol for Internet Applications", IEEE/ACM Transactions on Networking, Vol. 11, No. 1, pp. 17–32, February 2003. (Also in Proceedings of SIGCOMM'01, San Diego, CA, August 2001, pp. 149–160.)

Ion Stoica, Scott Shenker, and Hui Zhang, "Core-Stateless Fair Queueing", IEEE/ACM Transactions on Networking, Vol. 11, No. 1, pp. 33–46, February 2003.

Ion Stoica, Hui Zhang and T. S. Eugene Ng, "A Hierarchical Fair Service Curve Algorithm for Link-Sharing, Real-Time and Priority Service", in IEEE/ACM Transactions on Networking, Vol. 9, No. 2, pp. 185–199. (Also in Proceedings of SIGCOMM'97, Cannes, France, September 1997, pp. 249–262.)

Ion Stoica and Hussein Abdel-Wahab, "An Efficient Packet Service Algorithm for High Speed ATM Switches", Journal of Computer Communications, Vol. 21, No. 9, July 1998, pp. 839–852.

Sanjay K. Baruah, Johannes E. Gehrke, Greg Plaxton, Ion Stoica, Hussein Abdel-Wahab, and Kevin Jeffay, "Fair On-Line Scheduling of a Dynamic Set of Tasks on a Single Resource", Information Processing Letters, Vol. 64, No. 1, 1997, pp. 43–51.

Ion Stoica, Florin Sultan, and David Keyes, "A Hyperbolic Model for Communication in Layered Parallel Processing Environments", Journal of Parallel and Distributed Computing, Vol. 39, No. 1, 1996, pp. 29–45.

Ion Stoica, "A Time-Optimal Multiple-Query Nearest-Neighbor Algorithm on Meshes with Multiple Broadcast", International Journal of Pattern Recognition and Artificial Intelligence, Vol. 9, No. 4, 1996, pp. 663–677.

Ion Stoica, "Time-Optimal Algorithms for GDC and other Related Problems on Mesh Connected Computers and Meshes with Multiple Broadcasting", Parallel Algorithms and Applications, Vol. 8, 1996, pp. 271–283.

Hussein Abdel-Wahab, Ion Stoica, and Florin Sultan, "The Design and Implementation of an Internet Conference Information System", Internetworking - Research & Experience, Vol. 6, No. 2, 1996, pp. 117–142.

Hussein Abdel-Wahab, Ion Stoica, and Florin Sultan, "Universal Internet Conference Information System", Journal of Information Sciences, North-Holland, Vol. 91, No. 1/2, May 1996, pp. 1–16.

Conference Proceedings

Matei Zaharia, Dhruba Borthakur, Joydeep Sen Sarma, Khaled Elmeleegy, Scott Shenker, and Ion Stoica, "Delay Scheduling: A Simple Technique for Achieving Locality and Fairness in Cluster Scheduling", Proceedings of EuroSys'10, Paris, France, April 2010.

Lucian Popa, Byung-Gon Chun, Ion Stoica, Jaideep Chandrashekar, "Macroscope: End-Point Approach to Networked Application Dependency Discovery", Proceedings of CoNEXT'09, Rome, Italy, December 2009.

Gautam Altekar and Ion Stoica, "ODR: Output-Deterministic Replay for Multicore Debugging", Proceedings of ACM SOSP'09, Big Sky, MT, October 2009.

P. Brighten Godfrey, Igor Ganichev, Scott Shenker, and Ion Stoica, "Pathlet Routing", Proceedings of ACM SIGCOMM'09, Barcelona, Spain, August 2009.

Ganesh Ananthanarayanan and Ion Stoica, "Blue-Fi: Enhancing Wi-Fi Performance using Bluetooth Signals", Proceedings of MobiSys'09, Krakow, Poland, June 2009.

Ben Hindman, Andrew Konwinski, Matei Zaharia and Ion Stoica, "A Common Substrate for Cluster Computing", HotCloud 2009, June 2009.

Dilip A. Joseph, Arsalan Tavakoli, and Ion Stoica, "A Policy Aware Switching for Data Centers", Proceedings of ACM SIGCOMM'08, Seattle, WA, August 2008.

Matei Zaharia, Andy Konwinski, Anthony D. Joseph, Randy Katz, and Ion Stoica, "Improving MapReduce Performance in Heterogeneous Environments", Proceedings of ACM OSDI'08, San Diego, CA, December 2008.

Rodrigo Fonseca, Prabal Dutta, Philip Levis, and Ion Stoica, "Quanto: Tracking Energy in Networked Embedded Systems", Proceedings of ACM OSDI'08, San Diego, CA, December 2008.

Prabal Dutta, Razvan Musaloiu-E., Ion Stoica, and Andreas Terzis, "Wireless ACK Collisions Not Considered Harmful Prabal Dutta", Proceedings of HotNets-VIII, Calgary, Alberta, Canada, October 2008.

Philip Brighten Godfrey, Scott Shenker, and Ion Stoica, "Patleth Routing", Proceedings of HotNets-VIII, Calgary, Alberta, Canada, October 2008.

Anwitaman Datta, Ion Stoica and Mike Franklin, "LagOver: Latency Gradated Overlays", Proceedings of International Conference on Distributed Computing Systems (ICDCS'07), Toronto, Ontario, June, 2007 (Best Paper Award).

David Chu, Lucian Popa, Arsalan Tavakoli, Joseph Hellerstein, Philip Levis, Scott Shenker, and Ion Stoica, "The Design and Implementation of A Declarative Sensor Network System", Proceedings of SenSys'07, Sydney, Australia, November, 2007.

Sukun Kim, Rodrigo Fonseca, Prabal K. Dutta, Arsalan Tavakoli, David E. Culler, Philip Levis, Scott Shenker, and Ion Stoica, "Flush: A Reliable Bulk Transport Protocol for Multihop Wireless Networks", Proceedings of SenSys'07, Sydney, Australia, November, 2007, pp. 351-365.

Lucian Popa, Afshin Rostamizadeh, Richard M. Karp, Christos Papadimitriou, Ion Stoica, "Balancing Traffic Load in Wireless Networks with Curveball Routing", Proceedings of MobiHoc'07, Montreal, Canada, September 2007.

Teemu Koponen, Mohit Chawla, Byung-Gon Chun, Andrey Ermolinskiy, Kye Hyun Kim, and Scott Shenker, and Ion Stoica, "A Data-Oriented (and Beyond) Network Architecture", Proceedings of ACM SIGCOMM'07, Kyoto, Japan, August 2007.

Karthik Lakshminarayanan, Matthew Caesar, Murali Rangan, Tom Anderson, Scott Shenker, and Ion Stoica, "Achieving Convergence-Free Routing using Failure-Carrying Packets", Proceedings of ACM SIGCOMM'07, Kyoto, Japan, August 2007.

Ryan Huebsch, Minos Garofalakis, Joe Hellerstein, and Ion Stoica, "Sharing Aggregate Computation for Distributed Queries", Proceedings of ACM SIGMOD'07, Beijing, China, pp. 485–496, June 2007.

Animesh Nandi, Aditya Ganjam, Peter Druschel, Ion Stoica, Hui Zhang, and Bobby Bhattacharjee, "SAAR: A Shared Control Plane for Overlay Multicast", Proceedings of NSDI'07, Cambridge, MA, pp. 57–72, April 2007.

Dennis Geels, Gautam Altekar, Petros Maniatis, Timothy Roscoe, and Ion Stoica, "Friday: Global Comprehension for Distributed Replay", Proceedings of NSDI'07, Cambridge, MA, pp. 285–298, April, 2007.

Rodrigo Fonseca, George Porter, Randy Katz, Scott Shenker, and Ion Stoica, "X-Trace: A Pervasive Network Tracing Framework", Proceedings of NSDI'07, Cambridge, MA, pp. 271–284, April 2007.

Xiaofan Jiang, Prabal Dutta, David Culler, and Ion Stoica, "Micro Power Meter for Energy Monitoring of Wireless Sensor Networks at Scale", Proceedings of the Sixth International Conference on Information Processing in Sensor Networks (IPSN'07) Track on Sensor Platforms, Tools, and Design Methods (SPOTS '07), Cambridge MA, pp. 186–195, April 2007.

Cheng Tien Ee, Rodrigo Fonseca, Sukun Kim, Daekyeong Moon, Arsalan Tavakoli, David Culler, Scott Shenker and Ion Stoica, "A Modular Network Layer for Sensornets", Proceedings of OSDI'06, Seattle, WA, pp. 249–262, November 2006.

P. Brighten Goedfrey, Scott Shenker and Ion Stoica, "Minimizing Churn in Distributed Systems", Proceedings of ACM SIGCOMM'06, Pisa, Italy, pp. 147–158, September 2006.

Matthew Caesar, Tyson Condie, Jayanthkumar Kannan, Karthik Lakshminarayanan, Scott Shenker and Ion Stoica, "Routing on Flat Labels", Proceedings of ACM SIGCOMM'06, Pisa, Italy, pp. 363–374, September 2006

Lucian Popa, Costin Raiciu, Ion Stoica, David Rosenblum, "Reducing Congestion Effects in Wireless Networks by Multipath Routing", Proceedings of IEEE ICNP 2006, Santa Barbara, CA, November 2006 (on-line proceedings: http://www.ieee-icnp.org/2006/program.html).

Boon Thau Loo, Tyson Condie, Minos Garofalakis, David A. Gay, Joseph M. Hellerstein, Petros Maniatis, Raghu Ramakrishnan, Timothy Roscoe and Ion Stoica, "Declarative Networking: Language, Execution and Optimization", Proceedings of SIGMOD'06, Chicago, IL, pp. 97–108, June 2006.

Dilip Joseph, Jayanth Kannan, Ayumu Kubota, Karthik Lakshminarayanan, Ion Stoica and Klaus Wehrle, "OCALA: An Architecture for Supporting Legacy Applications over Overlays", Proceedings of NSDI'06, San Jose, CA, pp. 267–280, May 2006.

Dennis Geels, Gautam Altekar, Scott Shenker and Ion Stoica, "Replay Debugging for Distributed Applications", Proceedings of USENIX'06, Boston, MA, pp. 289–300, May 2006 (Best paper award).

Michael J. Freedman, Ion Stoica, David Mazieres, and Scott Shenker, "Group Therapy for Systems: Using link-attestations to manage failures", Proceedings of 5th International Workshop on Peer-to-Peer Systems (IPTPS '06), Santa Barbara, CA, February 2006, (on-line proceedings: http://iptps06.cs.ucsb.edu/)

Michael J. Freedman, Karthik Lakshminarayanan, Sean Rhea, and Ion Stoica, " Non-Transitive Connectivity and DHTs", USENIX Workshop on Real, Large-scale Distributed Systems (WORLDS), San Francisco, CA, December 2005. (on-line proceedings: https://db.usenix.org/events/worlds05/tech/)

Boon Thau Loo, Tyson Condie, Joseph M. Hellerstein, Petros Maniatis, Timothy Roscoe, and Ion Stoica, "Implementing Declarative Overlays", Proceedings of SOSP'05, pp. 75–90, October 2005.

Boon Thau Loo, Joseph M. Hellerstein, Ion Stoica, and Raghu Ramakrishnan, "Declarative Routing: Extensible Routing with Declarative Queries", Proceedings of ACM SIGCOMM'05, pp. 289–300, August 2005.

Yong Xia, Lakshminarayanan Subramanian, Ion Stoica, and Shivkumar Kalyanaraman, "One More Bit Is Enough", Proceedings of ACM SIGCOMM'05, pp. 37–48, August 2005.

Lakshminarayanan Subramanian, Matthew Caesar, Cheng Tien Ee, Mark Handley, Morley Mao, Scott Shenker, and Ion Stoica. "HLP: A Next-generation Interdomain Routing Protocol", Proceedings of ACM SIGCOMM'05, pp. 13–24, August 2005.

Sean Rhea, Brighten Godfrey, Brad Karp, John Kubiatowicz, Sylvia Ratnasamy, Scott Shenker, Ion Stoica, and Harlan Yu, "OpenDHT: A Public DHT Service and Its Uses", Proceedings of ACM SIGCOMM'05, pp. 73–84, August 2005.

Lakshminarayanan Subramanian, Randy H. Katz, Volker Roth, Scott Shenker, and Ion Stoica, "Reliable Broadcast in Unknown Fixed-Identity Networks", Proceedings of PODC'05, pp. 342–351, July 2005.

Jayanthkumar Kannan, Lakshminarayanan Subramanian, Ion Stoica, and Randy H. Katz. "Analyzing Cooperative Containment of Fast Scanning Worms", Proceedings of USENIX SRUTI'05 Workshop, July 2005 (on-line proceedings: http://www.usenix.org/events/sruti05/tech/).

Aleksandar Kuzmanovic, Dan Dumitriu, Ed Knightly, Ion Stoica, and Willy Zwaenepoel, " Denial-of-Service Resilience in Peer-to-Peer File Sharing Systems", Proceedings of ACM SIGMETRICS'05, pp. 38–49, June 2005.

Michal Feldman, John Chuang, Ion Stoica, and Scott Shenker, "Hidden-Action in Multi-Hop Routing", Proceedings of ACM E-Commerce Conference (EC'05), pp. 117–126, June 2005.

Ananth Rao and Ion Stoica, "An Overlay MAC Layer for 802.11 Networks", Proceedings of MobiSys'05, pp. 129–144, May 2005.

Rodrigo Fonseca, Sylvia Ratnasamy, Jerry Zhao, Cheng Tien Ee, David Culler, Scott Shenker, and Ion Stoica, "Beacon Vector Routing: Scalable Point-to-Point Routing in Wireless Sensornets", Proceedings of NSDI'05, May 2005.

Brighten Godfrey and Ion Stoica, "Heterogeneity and Load Balance in Distributed Hash Tables", Proceedings of INFOCOM'05, March 2005.

Shelley Zhuang, Dennis Geels, Ion Stoica, and Randy H. Katz, "On Failure Detection Algorithms in Overlay Networks", Proceedings of INFOCOM'05, March 2005.

Ryan Huebsch, Brent Chun, Joseph M. Hellerstein, Boon Thau Loo, Petros Maniatis, Timothy Roscoe, Scott Shenker, Ion Stoica, and Aydan R. Yumerefendi, "The Architecture of PIER: an Internet-Scale Query Processor", Proceedings of 2nd Biennial Conference on Innovative Data Systems Research (CIDR), Asilomar, CA, pp. 28–43, Jan 2005.

Karthik Lakshminarayanan, Ion Stoica, and Klaus Wehrle, "Support for Service Composition in i3", Proceedings of ACM Multimedia (Invited position paper), New York, NY, pp. 108–111, October 2004.

Hari Balakrishnan, Karthik Lakshminarayanan, Sylvia Ratnasamy, Scott Shenker, Ion Stoica, Michael Walfish, "A Layered Naming Architecture for the Internet", Proceedings of ACM SIGCOMM'04, September 2004 .

Michal Feldman, Christos Papadimitriou, John Chuang, and Ion Stoica, "Free-Riding and Whitewashing in Peer-to-Peer Systems", ACM SIGCOMM'04 Workshop on Practice and Theory of Incentives in Networked Systems (PINS), August 2004.

Boon Thau Loo, Joseph M. Hellerstein, Ryan Huebsch, Scott Shenker, Ion Stoica, "Enhancing P2P File-Sharing with an Internet-Scale Query Processor", Proceedings of VLDB 2004, pp. 432–443, September 2004.

Boon Thau Loo, Joseph M. Hellerstein, and Ion Stoica, "Customizable Routing with Declarative Queries", Proceedings of 3rd Workshop on Hot Topics in Networks (ACM SIGCOMM HotNets-III), November 2004.

Michal Feldman, Kevin Lai, Ion Stoica, and John Chuang, "Robust Incentive Techniques for Peer-to-Peer Networks", ACM E-Commerce Conference (EC'04), pp. 102–111, May 2004.

Lakshminarayanan Subramanian, Volker Roth, Ion Stoica, Scott Shenker and Randy H. Katz, "Listen and Whisper: Security Mechanisms for BGP", First Symposium on Networked Systems Design and Implementation (NSDI'04), pp. 127–140, March 2004. (Best student paper award)

Lakshminarayanan Subramanian, Ion Stoica, Hari Balakrishnan and Randy H. Katz, "OverQoS: An Overlay based Architecture for Enhancing Internet QoS", First Symposium on Networked Systems Design and Implementation (NSDI'04), pp. 71–84, March 2004.

Brighten Godfrey, Karthik Lakshminarayanan, Sonesh Surana, Richard Karp and Ion Stoica, "Load Balancing in Dynamic Structured P2P Systems", IEEE INFOCOM'04, March 2004.

Byung-Gon Chun, Rodrigo Fonseca, Ion Stoica and John Kubiatowicz, "Characterizing Selfishly Constructed Overlay Routing Networks ", IEEE INFOCOM'04, March 2004.

Boon Thau Loo, Ryan Huebsch, Ion Stoica, Joseph M. Hellerstein. "The Case for a Hybrid P2P Search Infrastructure", 3rd International Workshop on Peer-to-Peer Systems (IPTPS 2004), San Diego, CA, pp. 141–150, February 2004.

Karthik Lakshminarayanan, Daniel Adkins, Adrian Perrig and Ion Stoica, "Taming IP packet flooding attacks," 2nd Workshop on Hot Topics in Networks (HotNets-II), November 2003.

Ananth Rao, Christos Papadimitriou, Sylvia Ratnasamy, Scott Shenker and Ion Stoica, "Geographic Routing without Location Information", ACM MOBICOM 2003, San Diego, CA, pp. 96–108, September 2003.

Ryan Huebsch, Joseph Hellerstein, Nick Lanham, Boon Thau Loo, Scott Shenker and Ion Stoica, "Querying the Internet with PIER", 29th International Conference on Very Large Data Bases (VLDB'2003), Berlin, Germany, pp. 321–333, September 2003.

Krishna Gummadi, Ramakrishna Gummadi, Steve Gribble, Sylvia Ratnasamy, Scott Shenker and Ion Stoica, "The Impact of DHT Routing Geometry on Resilience and Proximity", ACM SIGCOMM 2003, Karlruhe, Germany, pp. 381–394, August 2003.

Kevin Lai, Michal Feldman, Ion Stoica, John Chuang, Incentives for Cooperation in Peer-to-Peer Networks, Workshop on Economics of Peer-to-Peer Systems, Berkeley, CA, June 2003.

Michal Feldman, Kevin Lai, John Chuang, Ion Stoica, Quantifying Disincentives in Peer-to-Peer Networks, Workshop on Economics of Peer-to-Peer Systems, Berkeley, CA, June 2003.

Shelley Zhuang, Kevin Lai, Ion Stoica, Randy Katz, Scott Shenker, "Host Mobility Using an Internet Indirection Infrastructure", Proceedings of MobiSys'03, pp. 129–144, May 2003. (Also published as Technical Report CS–02–1186, UC Berkeley, March 2002.)

Frank Dabek, Ben Zhao, Peter Druschel, John Kubiatowicz, Ion Stoica, "Towards a Common API for Structured Peer-to-Peer Overlays", in Second International Workshop on Peer-to-Peer Systems (IPTPS) 2003, pp. 33–44, Berkeley, CA, February 2003.

Ananth Rao, Karthik Lakshminarayanan, Sonesh Surana, Richard Karp, Ion Stoica, "Load Balancing in Structured P2P Systems", in Second International Workshop on Peer-to-Peer Systems (IPTPS) 2003, pp. 68–79, Berkeley, CA, February 2003.

Ion Stoica, Dan Adkins, Shelley Zhuang, Scott Shenker, Sonesh Surana, "Internet Indirection Infrastructure", Proceedings of ACM SIGCOMM'02, Pittsburgh, PA, pp. 73–86, August 2002.

Weidong Cui, Ion Stoica, Randy H. Katz, "Backup Path Allocation Based on a Correlated Link Failure Probability Model in Overlay Networks", Proceedings of ICNP'02, pp. 236–245, Paris, France, November 2002.

Lakshminarayanan Subramanian, Ion Stoica, Hari Balakrishnan, Randy Katz, "OverQoS: Offering QoS using Overlays", in First Workshop on Hot Topics in Networks (HotNets-I) 2002, Princeton, NJ, October 2002.

Tom Anderson, Scott Shenker, Ion Stoica, David Wetherall, "Design Guidelines for Robust Internet Protocols", in First Workshop on Hot Topics in Networks (HotNets-I) 2002, Princeton, NJ, October 2002.

S. Machiraju, M. Seshadri, and I. Stoica, "A Scalable and Robust Solution for Bandwidth Allocation", Proceedings of IWQoS'02, Miami Beach, FL, May 2002.

Sylvia Ratnasamy, Scott Shenker, Ion Stoica, "Routing Algorithms for DHTs: Some Open Questions", Proceedings of First International Workshop on Peer-to-Peer Systems IPTPS 2002, Cambridge, MA, pp. 45–52, March 2002.

Matthew Harren, Joe Hellerstein, Ryan Huebsch, Boon Thau Loo, Scott Shenker, Ion Stoica, "Complex Queris in DHT based Peer-to-Peer Networks", Proceedings of IPTPS 2002, Cambridge, MA, pp. 242–250, March 2002.

Ion Stoica, Hui Zhang, and Scott Shenker, "Self-Verifying CSFQ", Proceedings of IEEE INFOCOM'02, New York, NY, pp. 21–30, May 2002.

Frank Dabek, M. Frans Kaashoek, David Karger, Robert Morris, and Ion Stoica, "Wide-Area Cooperative Storage with CFS", Proceedings of ACM SOSP'01, Banff, Canada, pp. 202–215, October 2001.

Marco Mellia, Ion Stoica, and Hui Zhang, "Packet Marking for Web Traffic in Networks with RIO Routers", Proceedings of GLOBECOM'01, San Antonio, Texas, November 2001.

T. S. Eugene Ng, Ion Stoica, Hui Zhang, "A Waypoint Service Approach to Connect Heterogeneous Internet Address Spaces", Proceedings of USENIX'01, Boston, MA, pp. 319–332, June 2001.

Frank Dabek, Emma Brunskill, M. Frans Kaashoek, David Karger, Robert Morris, Ion Stoica, and Hari Balakrishnan, "Building Peer-to-Peer Systems With Chord, a Distributed Location Service", Proceedings of HotOS-VIII, pp. 71–76, Elmau/Oberbayern, Germany, May 2001.

Lee Breslau, Edward Knightly, Scott Shenker, Ion Stoica, Hui Zhang, "Endpoint Admission Control: Architectural Issues and Performance", Proceedings of SIGCOMM'00, Stockholm, Sweden, pp. 57–69, September 2000.

Ion Stoica, T. S. Eugene Ng, and Hui Zhang, "REUNITE: A Recursive Unicast Approach to Multicast", Proceedings of IEEE INFOCOM'00, Tel-Aviv, Israel, pp. 1644–1653, March 2000.

T. S. Eugene Ng, Donpaul Stephens, Ion Stoica, and H. Zhang, "Supporting Best-Effort Traffic With Fair Service Curve", Proceedings of GLOBECOM'99, Rio de Janeiro, Brazil, pp. 1799–1807, December 1999. (An extended abstract appeared Proceedings of SIGMETRICS'99.)

Ion Stoica and Hui Zhang, " Guaranteed Services Without Per Flow Management", Proceedings of SIGCOMM'99, Boston, MA, pp. 81–94, September 1999.

Ion Stoica, Scott Shenker and Hui Zhang, "Core-Stateless Fair Queueing: Achieving Approximately Fair Bandwidth Allocations in High Speed Networks", Proceedings of SIGCOMM'98, Vancouver, Canada, pp. 118–130, September 1998.

Ion Stoica and Hui Zhang, "LIRA: An Approach for Service Differentiation in the Internet", Proceedings of NOSSDAV'98, Cambridge, England, pp. 115–128, July 1998.

Ion Stoica and Hui Zhang, "Exact Emulation of an Output Queueing Switch by a Combined Input Output Queueing Switch", Proceedings of IWQoS'98, Napa, CA, pp. 218-224, May 1998.

T. S. Eugene Ng, I. Stoica and H. Zhang, "Packet Fair Queueing Algorithms for Wireless Networks with Location-Dependent Errors", Proceedings of IEEE INFOCOM'98, San Francisco, CA, pp. 1103–1111, March 1998.

Ion Stoica, Hussein Abdel-Wahab, and Kevin Jeffay, "On the Duality between Resource Reservation and Proportional Share Resource Allocation", Proceedings of Multimedia Computing and Networking 1997, SPIE Proceedings Series, Vol. 3020, San Jose, CA, pp 207–214, February 1997.

Ion Stoica, Hussein Abdel-Wahab, Kevin Jeffay, Sanjay K. Baruah, Johannes E. Gehrke, and Greg Plaxton, "A Proportional Share Resource Allocation for Real-Time, Time-Shared Systems", Proceedings of IEEE RTSS'96, Washington DC, pp. 288–299, December 1996.

Ion Stoica, and Alex Pothen, "A Robust and Flexible Microeconomic Scheduler for Parallel Computers", Proceedings of 3rd International Conference for High Performance Computing, India, December 1996.

Ion Stoica, Florin Sultan and David Keyes, "Evaluating the Hyperbolic Model on a Variety of Architectures", Proceedings of EUROPAR'96, Lyon, France, August 1996, pp. 387–396. (Also appeared in Lecture Notes in Computer Science, Vol. 1124, Springer-Verlag, 1996.)

Ion Stoica, Hussein Abdel-Wahab, and Alex Pothen, "A Microeconomic Scheduler for Parallel Computers", in Proceedings of the Workshop on Job Scheduling Strategies for Parallel Processing, IPPS'95, Santa-Barbara, April 1995, pp. 122–135. (Also appeared in Lecture Notes in Computer Science, Vol. 949, pp. 200–218, Springer-Verlag, 1995.)

Ion Stoica, Florin Sultan and David Keyes, "Modeling Communication in Cluster Computing", Proceedings of the 7th SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, pp. 820–825, February 1995.

Non-refereed Publications

Technical Reports

Nancy Lynch and Ion Stoica, "MultiChord: A Resilient Namespace Management Protocol", Technical Report TR–936, MIT, Cambridge, MA, February 2004.

Daniel Adkins, Karthik Lakshminarayanan, Adrian Perrig, Ion Stoica, "Towards a More Functional and Secure Network Infrastructure", Technical Report CS–03–1242, UC Berkeley, May 2002.

Ion Stoica, Robert Morris, David Karger, M. Frans Kaashoek, and Hari Balakrishnan, "Chord: A Scalable Peer-to-Peer Lookup Service for Internet Applications.", Technical Report TR–819, MIT, Cambridge, MA, March 2001.

Ion Stoica, "Stateless Core: A Scalable Approach for Quality of Service in the Internet, Technical Report, Carnegie Mellon University, CMU–CS–00–176, December 2000.

Ion Stoica and Hussein Abdel-Wahab, "A New Approach to Implement Proportional Share Resource Allocation", Technical Report 95–05, Old Dominion University, April 1995.

Ion Stoica, Florin Sultan, and David Keyes, "A Simple Hyperbolic Model for Communication in Parallel Processing Environments", ICASE Technical Report No. 94–78, 1994.

IETF Drafts

I. Stoica, H. Zhang, S. Shenker, R. Yavatkar, D. Stephens, A. Malis, Y. Bernet, Z. Wang, F. Baker, J. Wroclawski, C. Song, and R. Wilder, "Per hop behaviors based on dynamic packet states," Internet Draft, Internet Engineering Task Force, March 1999.