

JOHN W. BYERS

Department of Computer Science, Boston University
111 Cummington Mall, Boston, MA 02215 USA
<http://www.cs.bu.edu/fac/byers>

EDUCATION

- Ph.D.** Computer Science, University of California at Berkeley, December 1997.
Thesis: *Maximizing Throughput of Reliable Bulk Network Transmissions*
Committee: Michael Luby, Richard Karp, Christos Papadimitriou, Dorit Hochbaum
- B.A.** Computer Science, Economics and Mathematics, Cornell University, May 1991.

ACADEMIC APPOINTMENTS

- Professor**, Department of Computer Science, Boston University, 2014 - present.
Associate Chair of the Faculty, Dept. of Computer Science, Boston University, July 2018 - present.
Data Science Faculty Fellow, Boston University, 2017 - present.
Fellow, Hariri Institute, Boston University, 2012 - present.
Associate Professor, Department of Computer Science, Boston University, 2005 - 2014.
Associate Chair, Department of Computer Science, Boston University, 2007 - 2009.
Assistant Professor, Department of Computer Science, Boston University, 1999 - 2005.
Visiting Scientist, BBN Research, Cambridge, MA, Fall 2005.
Postdoctoral Researcher, International Computer Science Institute, Berkeley, CA, 1998.
Visiting Researcher, Sandia National Labs, Albuquerque, NM, Summer 1996.

INDUSTRY EXPERIENCE

- Board Member**, Board of Directors, Cogo Labs (fka Adverplex, Inc.), Cambridge, MA, 2008 - present.
Founding Chief Scientist, Cogo Labs, Cambridge, MA, 2007 - present
Chief Technology Officer, Adverplex, Inc., Wakefield, MA, 2005 (founding) to 2007.
During a leave of absence from B.U. in 2005-2007, I served as founding CTO at this data-driven start-up, which we later re-branded as Cogo Labs. As CTO, I oversaw the design and implementation of a proprietary search engine marketing platform for our incubated portfolio companies. Since returning to academia full-time in 2007, I have served primarily as a member of the Board of Directors and as a technical advisor. Cogo-incubated companies CourseAdvisor and Autotegrity were respectively acquired in 2007 and 2011 by the Washington Post and by Automated Data Processing (ADP). The Cogo-incubated firm EverQuote completed its IPO in June 2018 [NASDAQ: EVER].
- Affiliated Scientist and Technical Advisory Board Member**, Digital Fountain, Inc., Fremont, CA, 1998 (founding) - 2004.
As a part-time research scientist, I worked with the founding team to develop software and hardware solutions leveraging the advantages of rateless codes for various networking applications, following a line we initiated in academic research. Digital Fountain was acquired by Qualcomm in 2009.
- Course Instructor and Educational Consultant**, Hewlett-Packard Co., Palo Alto, CA, 7/92 - 8/98.

RESEARCH INTERESTS

Computer networking, electronic commerce, and large-scale data analysis.

HONORS AND AWARDS

- Finalist, 2018 edX Award.** For the BUx Questrom Micromasters in Digital Leadership, of which my co-taught course “Business Analytics for Data-Driven Decision Making” is the fifth and final leg.
- Finalist, 2018 AMA Paul E. Green Award.** Our paper [1] was recognized as one of the JMR papers published in 2017 with the most potential to contribute to the practice of marketing research.
- 2014 IEEE ICDE Influential Paper Award.** Awarded to our IEEE ICDE '04 paper [34] in recognition of “a work which has been highly impactful in the area of sensor networks, and has been shown to be applicable to any setting with multiple data sources that may suffer network failures, such as distributed data centers of today.”
- 2009 ACM SIGCOMM Test of Time Award.** Awarded to our SIGCOMM '98 paper [44] in recognition of “an outstanding paper whose contents are still a vibrant and useful contribution today”.
- 2004 IEEE ICDE Best Paper Award,** Also awarded to our IEEE ICDE '04 paper [34].
- National Science Foundation CAREER Award,** Advanced Networking Research Division, 2001.
- California Regents Fellowship, GAANN Fellowship,** U.C. Berkeley, 1992, 1994 - 1996.
- Outstanding Graduate Student Instructor Award,** CS Division of EECS, U.C. Berkeley, 1992.
- Phi Beta Kappa,** Cornell University, 1991.

BROADER IMPACT

Citations: Google Scholar lists 11,492 citations to my work, with a reported h-index of 41, i10-index of 66 (as of 4/3/18). For additional details, please “Search Authors” at Google Scholar for “John W. Byers”.

Courses: The institutions listed below have taught graduate courses in networking, algorithms, or electronic commerce where at least one of my publications was required reading (partial list): Carnegie-Mellon, Cornell, Dartmouth, Duke, Georgia Tech, Harvard, IIT Delhi, MIT, Princeton, Stanford, U.C. Berkeley, U.C. San Diego, U.C. Santa Barbara, U. Illinois at Urbana-Champaign, U. Maryland, U. Mass at Amherst, U. North Carolina, University of Southern California, U. Texas at Austin, U. Washington, U. Wisconsin, Washington U. at St. Louis, Yale.

Media Mentions: My recent work on Airbnb’s potential for disruptive impact in the hotel industry [1,21,49] received wide coverage in the popular press, including The Economist (4/26/14), on Bloomberg TV, and coverage in a front-page article in the New York Times (1/31/15). My earlier work on the reputation of Groupon merchants as viewed through Yelp reviewers [24, 26] was also widely covered. I was quoted in a front-page article in the New York Times, in a piece in NPR’s “Morning Edition”, on Bloomberg TV, and was a panelist in a 30-minute segment on WBUR.

SELECTED PROFESSIONAL ACTIVITIES

- Test of Time Award Committee Chair, ACM SIGCOMM, 2018.
- Technical Program Committee Co-Chair, ACM Internet Measurement Conference 2016, Santa Monica, CA, October 2016.
- General Co-Chair, ACM Internet Measurement Conference 2012, Boston, MA, November 2012.
- Technical Program Committee Co-Chair, ACM SIGCOMM 2011, Toronto, Canada, August 2011.
- ACM SIGCOMM Awards Chair, 2007 - 2008.
- Associate Editor, IEEE/ACM Transactions on Networking, 2003-2006.
- National Science Foundation Proposal Review Panelist. (Frequently from 2000-2016).
- General Chair, Fourth International Workshop on Networked Group Communication (NGC), Boston, MA, October 2002.

Co-organizer, DIMACS Workshop on Internet and WWW Measurement, Mapping and Modeling, DIMACS Center @ Rutgers University, Piscataway, NJ, February 13-15, 2002.

Co-organizer, BU/NSF Workshop on Internet Measurement, Instrumentation, and Characterization, Boston University, Boston, MA, August 30, 1999.

Other notable journal refereeing: Journal of the ACM, IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications (JSAC), SIAM Journal on Computing, Management Science, Marketing Science, IEEE Transactions on Computers, IEEE Transactions on Multimedia, IEEE Transactions on Parallel and Distributed Systems, ACM Transactions on Internet Technology, Computer Communications, Computer Networks.

MAJOR PROGRAM COMMITTEES

Technical Program Committee Member, ACM SIGCOMM (2003, 2004, 2006, 2011, 2013, 2015, 2017).

Technical Program Committee Member, ACM Internet Measurement Conference (2016, 2017, 2018).

Technical Program Committee Member, USENIX NSDI (2006, 2010, 2012).

Technical Program Committee Member, ACM STOC (2013).

Technical Program Committee Member, ACM Electronic Commerce (2013).

Technical Program Committee Member, ACM WSDM (2012).

Technical Program Committee Member, ACM PODC (2012).

Technical Program Committee Member, ACM CoNEXT (2010).

Technical Program Committee Member, IEEE Infocom (2005, 2009).

Technical Program Committee Member, IEEE ICNP (2002, 2003, 2004, 2005).

Technical Program Committee Member, HotNets IV (2005).

Technical Program Committee Member, ACM SPAA (2004).

Technical Program Committee Member, ACM SIGMETRICS (2001).

COLLEGE AND UNIVERSITY SERVICE AT BU

Search Advisory Committee for the Dean of the Questrom School of Business, 2017-2018, reporting to the Provost. One of two faculty representatives elected by the BU Faculty Council.

BU Spark! Advisory Board, College of Arts & Sciences, 2017-present.

BU Entrepreneurship Advisory Council, 2016-2017. Our committee recommendation and report to President Brown led to the launch of Innovate@BU in 2017 (URL: www.bu.edu/innovate).

Hariri Institute, Steering Committee Member, 2016-present.

Academic Program Review, Internal Committee Member for review of the Electrical and Computer Engineering (ECE) Department, 2016.

Appointment, Promotion & Tenure (APT) Committee, College of Arts & Sciences, AY 2014-2015.

Faculty Advisor Committee, UROP Program, 2012 - 2013.

College of Arts & Sciences Academic Conduct Committee, 1999 - 2004.

DEPARTMENTAL SERVICE FOR CS @ BU

Associate Chair of the Faculty, July 2018 - present.
 Ph.D. Admissions Committee Chair, AY 2017-2018.
 Director of Graduate Studies, 2012 - 2013.
 Associate Chair, 2007 - 2009.
 Faculty Search Committee Chair, 2001, 2002, 2016.
 Faculty Search Committee Member, 2000, 2004, 2005, 2007, 2009, 2017.
 Graduate Student Admissions Committee, 2001 - 2004, 2012.
 Computer Science Space Committee, 2011-2013.
 Computer Science Curriculum Committee, 2000.
 Computer Science Department Colloquium Coordinator, 1999 - 2000.

DOCTORAL STUDENTS ADVISED

Cody Doucette, 4th year Ph.D. student, currently enrolled.
 Qiaobin Fu, 4th year Ph.D. student, currently enrolled.
 Harshal Chaudhari, 4th year Ph.D. student, currently enrolled. Co-advised by Prof. Evimaria Terzi.
 Konstantinos Sotiropoulos, 1st year Ph.D. student, currently enrolled.
 Michel Machado, Ph.D., May 2014, "*Linux XIA: An Interoperable Meta Network Architecture*," B.U. Dept. of Computer Science. Current position: Chief Scientist, Digirati and Visiting Researcher, BUCS.
 Chong Wang, Ph.D., December 2012, "*Modeling Content Provider Networks from an Economic Perspective*," B.U. Dept. of Computer Science. Current position: R&D Engineer, LinkedIn.
 Georgios Zervas, Ph.D., August 2011, "*Data-Driven Analysis of Electronic Commerce Systems*," B.U. Dept. of Computer Science. Current position: Assistant Professor, Marketing Department, Questrom School of Management, Boston University.
 Gu-In Kwon, Ph.D., December 2004, "*Scalable Architectures for Multicast Content Distribution*," B.U. Dept. of Computer Science. Current position: Associate Professor, Inha University, South Korea.
 Jeffrey Considine, Ph.D., December 2004, "*Schedule Oblivious Data Management*," B.U. Dept. of Computer Science. Current position: Chief Scientist, Cogo Labs, Cambridge, MA.
 Khaled A. Harfoush, Ph.D., November 2001, "*A Framework for End-to-End Characterization of Metric-Induced Network Topologies*," B.U. Dept. of Computer Science. Co-advised by Azer Bestavros. Current position: Associate Professor of Computer Science, North Carolina State University.

DOCTORAL STUDENTS, EXAMINING COMMITTEE MEMBER

Davide Proserpio, Ph.D., May 2016, "*The Impact of Digital Information on Industries and Markets*," B.U. Dept. of Computer Science. Committee chair and research mentor. Current position: Assistant Professor of Marketing, University of Southern California (Marshall).
 Flavio Esposito, Ph.D., May 2013, "*A Policy-Based Architecture for Virtual Network Embedding*," B.U. Dept. of Computer Science. Second reader.
 Andrej Cvetkovski, Ph.D., May 2013, "*Graph Embeddings for Low-Stretch Greedy Routing*," B.U. Dept. of Computer Science. Third reader.
 Gonca Gürsun, Ph.D., March 2013, "*Inferring Hidden Features in the Internet*," B.U. Dept. of Computer Science. Third reader.

- Karim Mattar, Ph.D., December 2010, “*Policy Routing Dynamics: Theory and Applications*,” B.U. Dept. of Computer Science. Committee chair.
- Vijay Erramilli, Ph.D., December 2008, “*Forwarding in Mobile Opportunistic Networks*,” B.U. Dept. of Computer Science. Third reader.
- Georgios Smaragdakis, Ph.D., August 2008, “*Overlay Network Creation and Maintenance with Selfish Users*,” B.U. Dept. of Computer Science. Third reader.
- Hany Morcos, Ph.D., August 2008, “*Service Provisioning in Mobile Networks Through Coordinated Distributed Resource Management*,” B.U. Dept. of Computer Science. Committee chair.
- Scott W. Russell, Ph.D., December 2007, “*Communication and Query Privacy: Intrusion-Resilient Secure Channels and Private Database Queries*,” B.U. Dept. of Computer Science. Committee chair.
- John Rachlin, Ph.D., November 2006, “*Multi-Node Graphs and Their Application to Bioinformatics*,” B.U. Dept. of Computer Science. Committee member.
- Vishal Sood, Ph.D., August 2006, “*Interacting Particle Systems on Graphs*,” B.U. Dept. of Physics. Committee member.
- Anukool Lakhina, Ph.D., May 2006, “*Network-Wide Traffic Analysis: Methods and Applications*,” B.U. Dept. of Computer Science. Second reader.
- Shudong Jin, Ph.D., May 2003, “*Protocol Support for Scalable and Efficient Media Data Streaming*,” B.U. Dept. of Computer Science. Second reader.
- Liang Guo, Ph.D., April 2003, “*Size-Aware Scheduling of TCP Flows*,” B.U. Dept. of Computer Science. Third reader.
- Prithwish Basu, Ph.D., April 2003, “*A Task-Based Approach for Modeling Distributed Applications on Mobile Ad Hoc Networks*,” B.U. Dept. of Electrical and Computer Engineering. Third reader.
- Alberto Medina, Ph.D., March 2003, “*Practical Estimation of Internet Traffic Demands*,” B.U. Dept. of Computer Science. Second reader.
- Jun Liu, Ph.D., August 2002, “*Characterizing Network Elements and Paths Using Packet Loss Behavior*,” B.U. Dept. of Computer Science. Third reader.
- Paul Barford, Ph.D., June 2000, “*Modeling, Measurement and Performance of World Wide Web Transactions*,” B.U. Dept. of Computer Science. Second reader.

MENTORING OF JUNIOR FACULTY AND INSTRUCTORS

- Formal mentor for Charalampos Tsourakakis, Assistant Professor, B.U. Dept. of Computer Science, 2015-present.
- Teaching mentor for Dora Erdos, Lecturer and Undergraduate Program Director, B.U. Dept. of Computer Science, 2016-present.

SUPERVISION OF POSTDOCTORAL STUDENTS AND VISITING RESEARCHERS

- Michel Machado, Postdoctoral Researcher, Boston University, 2014-2015. Current position: CTO at Digirati Internet, Rio de Janeiro, Brazil.
- Guido Marchetto, Visiting Researcher, Boston University, 2008-2009. Current position: Associate Professor, Dept. of Control and Computer Engineering, Politecnico di Torino.
- Nikos Laoutaris, Marie Curie Postdoctoral Fellow, Boston University, 2005-2007. Current position: Senior Researcher and co-Founder of the Data Transparency Lab, Telefonica I+D, Barcelona.
- Boulat Bash, Visiting Researcher, Boston University, 2004-2005.

SUPERVISION OF MASTERS AND UNDERGRADUATE STUDENTS

Masters: John Peterson, Manish Sharma, Marwan Fayed, Stan Rost, Yuri Vaysman, Dmitriy Zavin, Igor Stubailo, Yazdan Shaghaghi, Min Guo.

Senior Honors Thesis: Ryan Mahon, David Blumstein, Stan Rost.

Undergraduate Research: Cody Doucette, Yvette Tsai, Nam Chu Hoai, Alan Burstein.

SELECTED INVITED COLLOQUIA

Institutes: DIMACS, Hariri Institute, Institute for Mathematics and its Applications (IMA), Institute for Pure and Applied Mathematics (IPAM), Korea Development Institute (KDI), Mathematical Sciences Research Institute (MSRI), Radcliffe Institute.

Industry: AT&T Laboratories, BBN Technologies, Bell Labs (Lucent), Cisco Systems, Intel Research, NEC Research Institute, Nortel Networks, Sprint Labs, Technicolor Research, Telefonica Research.

Universities: Boston University, Carnegie-Mellon University, Duke University, Harvard University, Tufts University, Université Pierre et Marie Curie, Laboratoire d'Informatique (LIP6), Universidad Carlos III de Madrid (UC3M), University of California at Berkeley, University of Maryland, University of Massachusetts at Amherst, University of North Carolina at Chapel Hill, University of Washington, University of Wisconsin, Williams College.

PATENTS

Generating High Weight Encoding Symbols Using a Basis, with A. Haken, M. Luby, G. Horn, D. Hernek, and M. Mitzenmacher. Issued as U.S. Patent 6,411,223, June 25, 2002.

On Demand Encoding with a Window, with M. Luby, G. Horn, J. Persch, A. Haken, and M. Mitzenmacher. Issued as U.S. Patent 6,486,803, November 26, 2002.

Multi-output Packet Server with Independent Streams, with M. Luby, R. Vainish, L. Rasmussen, D. Kushi, S. Simu, A. Perrig, R. Attias, M. Walfish, and D. Hernek. Issued as U.S. Patent 8,185,809, May 22, 2012. Continuation filing issued as U.S. Patent 8,671,673, March 11, 2014.

FUNDED GRANTS AND EXTERNAL SUPPORT

Collaborative Research: Revisiting Network QoS in the Cloud-based Era, Principal Investigator at BU with lead PI Fahad Dogar (Tufts). NSF Networking Technology and Systems, 10/1/18 – 9/31/21. Award to BU: \$200,000.

Gatekeeper: Distributed Denial-of-Service Defense, co-PI with Michel Machado, funding from Digirati Inc., 2016-2017. Two unrestricted gifts to BU: \$50,000.

FIA-NP: Collaborative Research: Deployment-Driven Evaluation and Evolution of the eXpressive Internet Architecture, PI at BU, joint with Carnegie-Mellon University (lead PI: Peter Steenkiste), Duke (PI: Bruce Maggs), and U. Wisconsin (PI: Aditya Akella), NSF Special Projects - CISE, 5/1/14 – 10/30/17. Award to BU: \$405,794 of \$6.1M total.

Holistic Security for Cloud Computing: Architecture for Modular System and Network Design, co-Principal Investigator, one of five NSF EAGER awards to fund our team at BU and MIT led by PI Ran Canetti, 9/1/13 – 2/28/15. Award to BU: \$299,992.

Designing Cloud and Big Data Platforms for Data-intensive Scientific Applications, co-PI, led by PI Orran Krieger at BU, funding from MA Green High-Performance Computing Center, 1/15/13. Award to BU: \$50,000.

To Tweet or to Yelp: Understanding and Shaping Online Consumer Feedback, PI, with co-PI Georgios Zervas, Hariri Institute, Boston University, 1/1/13. Award: \$26,500.

Accountability and Choice in Online Consumer Feedback, PI at BU with co-PI Joan Feigenbaum (Yale) and Georgios Zervas, Google Research Award, 8/15/12. Award to BU: \$26,500.

FIA: Collaborative Research: A Content and Service Friendly Architecture with Intrinsic Security and Explicit Trust, PI at BU, joint with Carnegie-Mellon University (lead PI: Peter Steenkiste), and U. Wisconsin (PI: Aditya Akella), NSF Special Projects - CISE, 9/1/10 – 8/31/14. Award to BU: \$476,385 of \$7.1M total.

Expressive Resource Specification and Discovery in Configurable Networks, PI at BU with co-PI Azer Bestavros, NSF Networking Technology and Systems (NeTS), 9/1/05 – 8/31/09. Award to BU: \$395,000.

ITR: Internet Flows as First-Class Values: Support for Dynamic, Flexible Internet Services, Co-PI with PI Azer Bestavros and three co-PIs, NSF Information Technology Research, 1/1/03 – 6/30/07. Award to BU: \$1,665,497.

SENSORIUM: Research Infrastructure for Managing Spatio-Temporal Objects in Video Sensor Networks, Senior Personnel, with eleven co-PIs, NSF Research Infrastructure Award, 8/1/02 – 7/31/07. Award to BU: \$1,247,395.

Gift from Sprint Advanced Technology Lab to fund BU/CS Networking Research, co-Principal Investigator with M. Crovella, A. Bestavros and I. Matta, 7/1/02. Award to BU: \$80,000.

Global Throughput Maximization via Fair Local Resource Allocation, Principal U.S. Investigator with lead PI Danny Raz (Technion), U.S. - Israel Binational Science Foundation, 8/1/01 – 7/31/03. Award to Technion: \$44,850.

CAREER: Flexible Strategies for Internet Content Distribution, PI, NSF Faculty Early Career Development Award, 6/1/01 - 5/31/06. Award to BU: \$482,467.

Diagnosis and Control of Network Variability at Massively Accessed Servers, Co-PI with PI Azer Bestavros and co-PI Mark Crovella, NSF Special Projects in Networking Award, 6/1/00 - 5/31/04. Award to BU: \$1,210,768.

BU/NSF Workshop on Internet Measurement, Instrumentation and Characterization, Co-PI with PI Azer Bestavros and co-PI Mark Crovella, NSF Advanced Networking Award, 8/15/99 - 2/15/00. Award to BU: \$11,494.

TEACHING

Business Analytics for Data-Driven Decision Making, QD602x, Questrom Digital Together with faculty members Chris Dellarocas and Andrei Lapets, we developed a new edX course within the new Questrom Micromasters programs in Digital Leadership and Digital Product Management. QD602x launched in March 2018, the second run will start in September 2018. The Micromasters in Digital Leadership was selected as a finalist for the 2018 edX Prize.

Electronic Commerce, CS elective. Introduced a new graduate/upper-division elective that takes an interdisciplinary approach to studying the technological foundations of firms facilitating electronic commerce. Students read and discuss papers in computer science, economics and marketing spanning: auction and market design, reputation and recommendation systems, and advertising networks. The capstone is a supervised semester-long, measurement-driven research project.

Computer Networks, CS 455/655. Redesigned and modernized the senior-level / introductory graduate-level networking course. Student projects include the design of a reliable, congestion-controlled file transfer protocol over UDP, and implementation of a link-state multicast routing protocol.

Introduction to Algorithms, CS 330. I teach our undergraduate majors a rigorous version of the required undergraduate Algorithms course, currently following the Kleinberg-Tardos text.

Algorithmic Aspects of Computer Networking, CS graduate elective. Introduced a new graduate course that considers theoretical advances that have had a significant impact on computer networking in the past five years. Students read and discuss papers on both the theory and practical applications of topics such as Bloom filters, consistent hashing, information dispersal, and spectral methods.

Combinatoric Structures, CS 131. Updated the introductory course in discrete mathematics for our undergraduate majors. Standard topics include: logic, proof techniques, mathematical induction, recurrences, counting, combinatorics, and some basic probability.

Introduction to Computer Science II (Data Structures), CS 112. Updated the second semester of our introductory sequence for majors, covering the material in an introductory data structures course: linear data structures, sorting, searching, trees, and basic graph algorithms.

A Critical Look at Network Protocols, CS graduate elective. Introduced a new graduate course that surveys fifty classic papers across computer networking and prepares Ph.D. students both to conduct research in networking and to write their doctoral written exam. Semester-long student projects in both this course and my other electives have ultimately led to a number of student publications.

Software Job Skills at Hewlett-Packard. At H-P Palo Alto, I taught a retraining program in Computer Science to bright and motivated engineers with minimal prior software experience. The full-time, 17-week curriculum started with the C programming language and data structures in an intensive eight weeks, followed by samplers on assembly language, operating systems, networking, software engineering, and web programming, and culminating in a two-week software engineering capstone.

REFEREED JOURNAL PUBLICATIONS

1. G. Zervas, D. Proserpio, and J. W. Byers, "The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry," *Journal of Marketing Research (JMR)*, 54 (5), pp. 687-705, October 2017. [Finalist for the 2018 AMA Paul E. Green Award.]
2. D. Naylor, M. Mukerjee, P. Agyapon, R. Grandl, R. Kang, M. Machado, S. Brown, C. Doucette, H.-C. Hsiao, D. Han, T. Kim, H. Lim, C. Ovon, D. Zhou, S. Lee, Y.-H. Lin, C. Stuart, D. Barrett, A. Akella, D. Anderson, J. W. Byers, L. Dabbish, M. Kaminsky, S. Kiesler, J. Peha, A. Perrig, S. Seshan, M. Sirbu, and P. Steenkiste, "XIA: Architecting a More Trustworthy and Evolvable Internet," *ACM SIGCOMM Computer Communication Review (CCR)*, 44(3), pp. 50-57, July 2014.
3. G. Smaragdakis, N. Laoutaris, V. Lekakis, A. Bestavros, J. W. Byers, and M. Roussopoulos. "Selfish Overlay Network Creation and Maintenance," *IEEE/ACM Transactions on Networking*, 19(6), pp. 1624-37, December 2011.
4. G. Smaragdakis, N. Laoutaris, P. Michiardi, A. Bestavros, J. W. Byers and M. Roussopoulos. "Distributed Network Formation for n-way Broadcast Applications," *IEEE Transactions on Parallel and Distributed Systems*, 21(10), pp. 1427-41, October 2010.
5. J. Considine, M. Hadjieleftheriou, F. Li, J. W. Byers and G. Kollios, "Robust Approximate Aggregation in Sensor Data Management Systems," *ACM Transactions on Database Systems*, 34(1), pp. 1-35, April 2009.
6. K. Harfoush, A. Bestavros and J. W. Byers, "Measuring Capacity Bandwidth of Targeted Path Segments," *IEEE/ACM Transactions on Networking*, 17(1), pp. 80-92, February 2009.
7. J. W. Byers, G.-I. Kwon, M. Luby and M. Mitzenmacher, "Fine-Grained Layered Multicast using STAIR," *IEEE/ACM Transactions on Networking*, 14(1), pp. 81-93, March 2006.
8. J. W. Byers, J. Considine, G. Itkis, M. C. Cheng and A. Yeung, "Securing Bulk Content Almost for Free," *Computer Communications*, 29(3), Special Issue on Internet Security, pp. 280-290, February 2006.
9. A. Bestavros, J. W. Byers, and K. Harfoush, "Inference and Labeling of Metric-Induced Network Topologies," *IEEE Transactions on Parallel and Distributed Systems*, 16(11), pp. 1053-1065, November 2005.
10. J. W. Byers, J. Considine, M. Mitzenmacher, and S. Rost, "Informed Content Delivery Across Adaptive Overlay Networks," *IEEE/ACM Transactions on Networking*, 12(5), pp. 767-780, October 2004.

11. G.-I. Kwon and J. W. Byers, "Leveraging Single Rate Schemes in Multiple Rate Multicast Congestion Control Design," *IEEE Journal on Selected Areas in Communications, Special Issue on Design, Implementation and Analysis of Communication Protocols*, 22(10), pp. 1975-1986, December 2004.
12. Y. Bartal, J. W. Byers and D. Raz, "Fast, Distributed Approximation Algorithms for Positive Linear Programming with Applications to Flow Control," *SIAM Journal on Computing*, 33(6), pp. 1261 - 1279, August 2004.
13. A. Lakhina, J. W. Byers, M. Crovella, and I. Matta, "On the Geographical Location of Internet Resources," *IEEE Journal on Selected Areas in Communications, Special Issue on Internet and WWW Measurement, Mapping and Modeling*, 21(6), pp. 934-948, August 2003.
14. M. Fayed, P. Krapivsky, J. W. Byers, M. Crovella, D. Finkel, and S. Redner, "On the Emergence of Highly Variable Distributions in the Autonomous System Topology," *ACM SIGCOMM Computer Communication Review (CCR)*, 33(2), pp. 41-50, April 2003.
15. J. W. Byers, M. Luby and M. Mitzenmacher, "A Digital Fountain Approach to Asynchronous Reliable Multicast," *IEEE Journal on Selected Areas in Communications, Special Issue on Network Support for Multicast Communications*, 20(8), pp. 1528-1540, October 2002.
16. J. W. Byers, G. Horn, M. Luby, M. Mitzenmacher and W. Shaver, "FLID-DL: Congestion Control for Layered Multicast," *IEEE Journal on Selected Areas in Communications, Special Issue on Network Support for Multicast Communications*, 20(8), pp. 1558-1570, October 2002.
17. S. Rost, J. W. Byers and A. Bestavros, "The Cyclone Server Architecture: Streamlining Delivery of Popular Content," *Computer Communications*, 25(4), pp. 403-412, March 2002.
18. M. Adler, J. W. Byers and R. M. Karp, "Parallel Sorting with Limited Bandwidth," *SIAM Journal on Computing* 29(6), pp. 1997-2015, June 2000.
19. A. Medina, I. Matta and J. W. Byers, "On the Origin of Power Laws in Internet Topologies," *ACM SIGCOMM Computer Communication Review (CCR)*, 30(2), pp. 18-28, April 2000.

PEER-REVIEWED CONFERENCE PUBLICATIONS (TOP TIER)

20. H. Chaudhari, J. W. Byers, E. Terzi, "Putting Data in the Driver's Seat: Optimizing Earnings for On-Demand Ride-Hailing," in *Proc. of the 11th ACM International Conference on Web Search and Data Mining (WSDM)*, Los Angeles, CA, February 2018.
21. G. Zervas, D. Proserpio, and J. W. Byers, "The Impact of the Sharing Economy on the Hotel Industry: Evidence from Airbnb's Entry in Texas," Presented at the *16th ACM Conference on Economics and Computation (EC '15)*, Portland, OR, June 2015.
22. M. Machado, C. Doucette and J. W. Byers, "Linux XIA: An Interoperable Meta Network Architecture to Crowdfund the Future Internet," In *Proc. of the 11th ACM/IEEE Symp. on Architectures for Networking and Communications Systems (ANCS '15)*, May 2015, Oakland CA.
23. B. Golshan, J. W. Byers and E. Terzi, "What Do Row and Column Marginals Reveal About Your Dataset?" In *Proc. of 27th Neural Information Processing Systems Conference (NIPS '13)*, Lake Tahoe, NV, December 2013.
24. J. W. Byers, M. Mitzenmacher and G. Zervas, "The Groupon Effect on Yelp Ratings: A Root Cause Analysis," in *Proc. of the 13th ACM Conference on Electronic Commerce (EC '12)*, Valencia, Spain, June 2012.
25. D. Han, A. Anand, F. Dogar, B. Li, H. Lim, M. Machado, A. Mukundan, W. Wu, A. Akella, D. Andersen, J. W. Byers, S. Seshan and P. Steenkiste, "XIA: Efficient Support for Evolvable Internet-networking," in *Proc. of 9th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, San Jose, CA, April 2012.
26. J. W. Byers, M. Mitzenmacher and G. Zervas, "Daily Deals: Prediction, Social Diffusion, and Reputational Ramifications," in *Proc. of the Fifth ACM International Conference on Web Search and Data Mining (WSDM)*, Seattle, WA, February 2012.

27. A. Anand, F. Dogar, D. Han, B. Li, H. Lim, M. Machado, W. Wu, A. Akella, D. Andersen, J. W. Byers, S. Seshan and P. Steenkiste, "XIA: An Architecture for an Evolvable and Trustworthy Internet," in *Proc. of ACM HotNets X*, Cambridge, MA, November 2011.
28. J. W. Byers, M. Mitzenmacher and G. Zervas, "Information Asymmetries in Pay-Per-Bid Auctions," in *Proc. of 11th ACM Conf. on Electronic Commerce (EC '10)*, Cambridge MA, June 2010.
29. J. W. Byers, M. Mitzenmacher and G. Zervas, "Adaptive Weighing Designs for Keyword Value Computation," in *Proc. of the Third ACM International Conference on Web Search and Data Mining (WSDM)*, New York, February 2010.
30. G. Smaragdakis, V. Lekakis, N. Laoutaris, A. Bestavros, J. W. Byers, and M. Roussopoulos, "EGO-IST: Overlay Routing using Selfish Neighbor Selection," in *Proceedings of ACM CoNEXT 2008*, Madrid, December 2008.
31. G. Smaragdakis, N. Laoutaris, P. Michiardi, A. Bestavros, J. W. Byers, and M. Roussopoulos, "Swarming on Optimized Graphs for n-way Broadcast," in *Proceedings of IEEE Infocom 2008, the 27th Annual Joint Conference of the IEEE Computer and Communication Societies*, Phoenix, May 2008.
32. N. Laoutaris, G. Smaragdakis, A. Bestavros, and J. W. Byers, "Implications of Selfish Neighbor Selection in Overlay Networks," in *Proceedings of IEEE Infocom 2007, the 26th Annual Joint Conference of the IEEE Computer and Communication Societies*, Anchorage, May 2007.
33. J. W. Byers, J. Considine and M. Mitzenmacher, "Geometric Generalizations of the Power of Two Choices," in *Proceedings of ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Barcelona, Spain, pp. 54-63, June 2004.
34. J. Considine, F. Li, G. Kollios and J. W. Byers, "Approximate Aggregation Techniques for Sensor Databases," in *Proceedings of the 20th IEEE Int'l Conference on Data Engineering (ICDE '04)*, Boston, MA, pp. 449-460. April 2004. [Winner of the IEEE ICDE Best Paper Award in 2004 and the IEEE ICDE Influential Paper Award in 2014.]
35. G.-I. Kwon and J. W. Byers, "ROMA: Reliable Overlay Multicast with Loosely Coupled TCP Connections," in *Proceedings of IEEE Infocom 2004, the 23rd Annual Joint Conference of the IEEE Computer and Communication Societies*, Hong Kong, March 2004.
36. K. Harfoush, A. Bestavros and J. W. Byers, "Measuring Bottleneck Bandwidth of Targeted Path Segments," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
37. G.-I. Kwon and J. W. Byers, "Smooth Multirate Multicast Congestion Control," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
38. A. Lakhina, J. W. Byers, M. Crovella and P. Xie, "Sampling Biases in IP Topology Measurements," in *Proceedings of IEEE Infocom 2003, the 22nd Annual Joint Conference of the IEEE Computer and Communication Societies*, San Francisco, CA, April 2003.
39. J. W. Byers, J. Considine, M. Mitzenmacher, and S. Rost, "Informed Content Delivery Across Adaptive Overlay Networks," in *Proceedings of ACM SIGCOMM 2002*, Pittsburgh, PA, pp. 47-60, August 2002.
40. A. Bestavros, J. W. Byers, and K. Harfoush, "Inference and Labeling of Metric-Induced Network Topologies," in *Proceedings of IEEE Infocom '02, the 21st Annual Joint Conference of the IEEE Computer and Communication Societies*, New York, NY, June 2002.
41. J. W. Byers, M. Luby and M. Mitzenmacher, "Fine-Grained Layered Multicast," in *Proceedings of IEEE Infocom '01, the 20th Annual Joint Conference of the IEEE Computer and Communication Societies*, Anchorage, AK, pp. 1143-1151, April 2001.
42. K. Harfoush, A. Bestavros and J. W. Byers, "Robust Identification of Shared Losses Using End-to-End Unicast Probes," in *Proceedings of the 8th IEEE International Conference on Network Protocols (ICNP)*, Osaka, Japan, pp. 22-33, November 2000.

43. J. W. Byers, M. Luby and M. Mitzenmacher, "Accessing Multiple Mirror Sites in Parallel: Using Tornado Codes to Speed Up Downloads," in *Proceedings of IEEE Infocom '99, the 18th Annual Joint Conference of the IEEE Computer and Communication Societies*, New York, NY, pp. 275-284, March 1999.
44. J. W. Byers, M. Luby, M. Mitzenmacher and A. Rege, "A Digital Fountain Approach to Reliable Distribution of Bulk Data," in *Proceedings of ACM SIGCOMM 1998*, Vancouver, Canada, pp. 56-67, September 1998. [Received the ACM SIGCOMM Test of Time Award in 2009.]
45. Y. Bartal, J. W. Byers and D. Raz. "Global Optimization Using Local Information with Applications to Flow Control," in *Proceedings of the 38th IEEE Symposium on Mathematical Foundations of Computer Science (FOCS)*, Miami Beach, FL, pp. 303-12, October 1997.
46. M. Adler, J. W. Byers and R. M. Karp, "Parallel Sorting with Limited Bandwidth," in *Proceedings of the 7th ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Santa Barbara, CA, pp. 129-36, July 1995.
47. M. Adler and J. W. Byers, " AT^2 Bounds for a Class of VLSI Problems and String Matching," in *Proceedings of the 6th ACM Symposium on Parallel Algorithms and Architectures (SPAA)*, Cape May, NJ, pp. 140-6, June 1994.

PEER-REVIEWED WORKSHOP PAPERS

48. H. Chaudhari and J. W. Byers, "Impacts of Free App Promotion: A Case Study of the Amazon Appstore," Presented at the Workshop on Two-sided Marketplace Optimization (TSMO), co-located with WSDM 2018, Santa Monica CA, February 2018.
49. J. W. Byers, D. Proserpio and G. Zervas, "The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry," Presented at the *Workshop on Information Systems and Economics (WISE)*, Milan, Dec 2013.
50. J. W. Byers, F. Esposito, D. Proserpio and G. Zervas, "The Hyper-local Economic Impact of Airbnb," in *Proc. of Ninth Symposium on Statistical Challenges in eCommerce Research (SCECR '13)*, Lisbon, Portugal, June 2013.
51. J. W. Byers, B. Heeringa, M. Mitzenmacher and G. Zervas, "Heapable Sequences and Subsequences," in *Proc. of the Eighth SIAM Workshop on Analytic Algorithmics and Combinatorics (ANALCO)*, San Francisco, CA, January 2011.
52. B. Bash, J. W. Byers and J. Considine, "Approximately Uniform Random Sampling in Sensor Networks," in *Proceedings of the 1st Workshop on Data Management in Sensor Networks (DMSN '04)*, Toronto, Canada, August 2004.
53. J. Considine, J. W. Byers and K. Mayer-Patel, "A Constraint Satisfaction Approach to Testbed Embedding Services," in *Proceedings of HotNets-II*, Cambridge, MA, November 2003. Published in *ACM SIGCOMM Computer Communications Review (CCR)* 34(1), pp. 137-142, January 2004.
54. J. W. Byers, J. Considine, and M. Mitzenmacher, "Simple Load Balancing for Distributed Hash Tables," in *Proceedings of 2nd Int'l Workshop on Peer-to-Peer Systems (IPTPS '03)*, Berkeley, CA, pp. 31-35, February 2003.
55. A. Lakhina, J. W. Byers, M. Crovella, and I. Matta, "On the Geographical Location of Internet Resources," in *Proceedings of the SIGCOMM Internet Measurement Workshop (IMW '02)*, Marseilles, France, pp. 249-250, November 2002.
56. M. Sharma and J. W. Byers, "How Well Does File Size Predict Wide-Area Transfer Time?" in *Proceedings of IEEE Global Internet Symposium '02*, Taipei, Taiwan, November 2002.
57. K. Harfoush, A. Bestavros, and J. W. Byers, "Periscope: An Active Measurement API," in *Proceedings of the Passive and Active Measurement Workshop (PAM 2002)*, Fort Collins, CO, March 2002.

58. J. W. Byers and G.-I. Kwon, "STAIR: Practical AIMD Multirate Multicast Congestion Control," in *Proceedings of the 3rd Int'l Workshop on Networked Group Communication (NGC 2001)*, LNCS Volume 2233, London, UK, pp. 100-112, November 2001.
59. P. Barford, A. Bestavros, J. W. Byers and M. Crovella, "On the Marginal Utility of Network Topology Measurements," in *Proceedings of the SIGCOMM Internet Measurement Workshop (IMW '01)*, San Francisco, CA, pp. 5-17, November 2001.
60. A. Medina, A. Lakhina, I. Matta and J. Byers, "BRITE: An Approach to Universal Topology Generation," In *Proceedings of Ninth IEEE MASCOTS '01 (Tools track)*, Cincinnati, OH, pp. 346-53, August 2001.
61. S. Rost, J. W. Byers and A. Bestavros, "The Cyclone Server Architecture: Streamlining Delivery of Popular Content," in *Proceedings of the 6th Int'l Workshop on Web Caching and Content Distribution (WCW)*, Boston, MA, pp. 147-163, June 2001.
62. J. W. Byers, M. Frumin, G. Horn, M. Luby, M. Mitzenmacher, A. Roetter and W. Shaver, "FLID-DL: Congestion Control for Layered Multicast," in *The 2nd International Workshop on Networked Group Communication (NGC 2000)*, Stanford, CA, pp. 71-81, November 2000.
63. J. W. Byers and G. Nasser, "Utility-Based Decision-Making in Wireless Sensor Networks," in *The IEEE International Workshop on Mobile and Ad Hoc Networks (MobiHOC)*, Boston, MA, pp. 143-144, August 2000.
64. Y. Bartal, J. W. Byers, M. Luby and D. Raz, "Feedback-Free Multicast Prefix Protocols," in *Proceedings of the 3rd Annual IEEE Symposium on Computers and Communication (ISCC)*, Athens, Greece, pp. 135-42, June 1998.
65. M. Adler, Y. Bartal, J. W. Byers, M. Luby and D. Raz, "A Modular Analysis of Network Transmission Protocols," in *Proceedings of the 5th Israeli Symposium on Theory of Computing and Systems (ISTCS)*, Ramat Gan, Israel, pp. 54-62, June 1997.

INVITED MAGAZINE AND CONFERENCE PAPERS

66. J.W. Byers, M. Mitzenmacher, and G. Zervas, "The Daily Deals Marketplace: Empirical Observations and Managerial Implications," ACM SIGecom Exchanges, December 2012.
67. J. W. Byers and J. C. Mogul (editors), "Report on the ACM SIGCOMM '11 Conference," In *Computer Communication Review (CCR)*, pp. 80-96, January 2012,
68. J. W. Byers and D. Raz, "Flow Allocation Games: Pricing, Equilibria and Fast Convergence," In *Proceedings of the 43rd Annual Allerton Conference on Communication, Control, and Computing*, Monticello, IL, September 2005.
69. G. Kollios, J. W. Byers, J. Considine, M. Hadjieleftheriou and F. Li "Robust Aggregation in Sensor Networks," *IEEE Data Engineering Bulletin*, 28(1), pp. 26-32, March 2005.
70. J. W. Byers, "Flexible Transport Services for Emerging Opportunities in Internet Content Delivery," In *Proceedings of SPIE ITCOM, Conference on Scalability and Traffic Control in IP Networks*, Denver, CO, pp. 20-31, August 2001.
71. M. Adler, J. W. Byers and R. M. Karp, "Scheduling Parallel Communication: The h -relation Problem," in *Proceedings of the 20th International Symposium of Mathematical Foundations of Computer Science (MFCS)*, Prague, Czech Republic, pp. 1-20, August 1995.

Boston, MA, August 30, 2018.