MARK E. CROVELLA

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Date of Birth: October 28, 1959
Location: Buffalo, New York, USA
Nationality: USA

Current as of November 19, 2013

EDUCATION

Ph.D. Computer Science, University of Rochester, October 1994.

M.S. University of Rochester, May 1991.

M.S. State University of New York at Buffalo, May 1990.

B.S. Cornell University, May 1982.

PROFESSIONAL EXPERIENCE

Professor and Chair Department of Computer Science, Boston University, July 2013 to present; **Professor** September 2006 to present; **Associate Professor** September 2000 – September 2006; **Assistant Professor** September 1994 – September 2000. On leave September 2000 to September 2001.

Chief Scientist Guavus, Inc., February 2012 to present.

Visiting Associate Professor Laboratoire d'Informatique de Paris 6 (LIP6). August 2003 to August 2004.

Technical Director Network Appliance, Tewksbury, MA. November 2000 to April 2002.

Chief Architect Webmanage Technologies, Chelmsford, MA. May 2000 to acquisition by Network Appliance in November 2000.

Lead Research Scientist epicRealm, Inc., Richardson, TX. January to May 2001.

Senior Computer Scientist Calspan Corporation, Buffalo, NY. August 1984 to August 1994.

HONORS

IETF/IRTF Applied Networking Research Prize for "Routing State Distance: A Path-based Metric for Network Analysis," ACM Internet Measurement Conference (IMC), 2012.

Best Student Paper Award for "Intrusion as (Anti)social Communication: Characterization and Detection," ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2012.

IEEE Fellow, 2011, "For contributions to the measurement and analysis of networks and distributed systems."

ACM Fellow, 2010, "For contributions to the measurement and analysis of networks and distributed systems."

ACM SIGMETRICS Test of Time Award for "Self-Similarity in World Wide Web Traffic: Evidence and Possible Causes," (with Azer Bestavros). One of the three inaugural Test of Time Awards given by SIGMETRICS in 2010. The award is given for a paper published between 1973 and 1999 that has had the greatest impact over the subsequent period.

CNRS Fellowship, Centre National de la Recherche Scientifique (Department Sciences et Technologies de l'Information et de la Communication), for 2003-2004 academic year as Visiting Associate Professor at Laboratoire d'Informatique de Paris 6 (LIP6).

NSF CAREER Award, 1995.

ARPA Fellowship in High Performance Computing, 1993-1994.

DARPA Parallel Processing Fellowship, 1992-1993.

EDITORIAL BOARDS

Editor, Computer Communication Review, 2005 – 2008.

Editor, Computer Networks, 2004 – 2005.

Editor, IEEE/ACM Transactions on Networking, 2000 – 2006.

Editor, IEEE Transactions on Computers, 2000 – 2004.

FUNDING

"Understanding Communication Strategies for Ad Hoc Networks," NSF CISE/CNS NeTS Small, 8/1/11 – 7/31/14, $390,853.

"Information and Software Assurance: A Coordinated Approach to Cyber-Situation Awareness Based on Traffic Anomaly Detection,", DoD ARO, 9/1/2011 - 8/31/2015, $800,000 with 3 other PIs.

"Securing the Open Softphone," NSF CISE/CNS TC Large, 7/1/10 – 6/30/15, $2,992,896, with 8 other PIs. REU Supplement, 4/13/11 – $73,125.

"New Directions in Network Dimensionality Reduction for Routing and Beyond," NSF CISE/CNS NeTS Small, 7/1/10 – 6/30//13, $450,000.

"Wide-Aperture Traffic Analysis for Internet Security," NSF CISE/CNS TC Medium, 9/1/09 – 8/31/13, $723,053, with 2 other PIs.

Sponsoring Advisor for Postdoctoral Fellow under the *Computing Innovations Fellowship Program,* NSF CIF, 9/1/09 – 8/31/11, $267,500.

"Passive Methods for Internet Topology Discovery," National Geospatial Intelligence Agency, 8/1/09 – 7/31/12, $360,000.

"Instrumentation and Measurement for GENI," NSF/BBN, 8/1/08 – 8/31/11, $80,932

"Whole-Network Anomaly Diagnosis," Intel, 1/1/05 – 12/31/07, $158,000.

"Coordinate Systems for the Internet," NSF CISE/ANI, 8/15/03 – 7/31/06, $222,035.

"Collaborative Research: Modular Strategies for Global internetwork Monitoring," with 6 other PIs, NSF CISE/CCR ITR, 9/1/03 – 8/31/08, $1,994,513.

"Research Support for IP Network Characterization," Sprint Advanced Technology Laboratories, 9/1/03 – 8/31/04, $29,592.

"Research Support for IP Network Characterization," with 3 other PIs, Sprint Advanced Technology Laboratories, 9/1/02 – 8/31/03, $80,000.

"A Control Theoretic Approach to the Design of Internet Traffic Managers," with 3 other PIs, NSF CISE/ANIR, 9/1/01 – 8/31/05, $719,994.

"Diagnosis and Control of Network Variability by Massively Accessed Servers," with 2 other Principal Investigators, NSF CISE/ANI, 9/1/00 – 8/31/05, $1,210,768.

"Wide Area Web Measurement," GTE Laboratories, 9/1/00 – 8/31/01, $20,000.

"Wide Area Web Measurement," Xerox PARC, 9/1/99 – 8/31/00, $15,000.

"COMMONWEALTH: Architecture and Protocols for Scalable WWW Service," with 2 other Principal Investigators, NSF CISE/CCR Experimental Software Systems, 7/15/97 – 6/30/00, $590,087.

"Research Support for Network Performance Characterization, Analysis, and Evaluation," Principal Investigator, Hewlett-Packard Company, 9/1/96 – 9/1/97: $69,404. Renewed for 9/1/97 – 9/1/98: $88,154. Renewed for 9/1/98 – 9/1/99: $29,873.

"Practical Performance Prediction for Parallel Programmers," Principal Investigator, NSF CISE/CCR CAREER, 9/1/95 – 5/31/98, $91,066

"Research Infrastructure for Parallel and Distributed Systems: Real-Time, Multimedia, and High-Performance," with 4 other Principal Investigators, NSF CISE Institional Infrastructure, $874,019

"Research Instrumentation for Real-Time, Multimedia and High-Performance Computing in Distributed Systems," with 4 other Principal Investigators, NSF CISE IGR, $142,744

"Graduate Assistantships in High Performance Computing," with 5 other Principal Investigators, US Dept. of Education, 9/1/95 – 8/31/98, $354,645

PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (Fellow)
IEEE (Fellow)
ACM SIGCOMM and SIGMETRICS
IEEE Computer Society and Communication Society

INVITED CONFERENCE TALKS

Invited Speaker, *51st Annual Allerton Conference on Communication, Control, and Computing,* University of Illinois at Urbana-Champaign, October 3, 2013.

Invited Speaker, *Network Links: Connecting Social, Communication and Biological Network Analysis,* Institute for Mathematics and its Applications (IMA), Minneapolis, MN, February 29, 2012.

Invited Speaker, *Statistics of Networks Workshop,* Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, June 24-25, 2010.

Keynote Speaker, *NetEval 2009 Workshop, The First Workshop on Performance Evaluation of Next-Generation Networks,* Boston, MA, April 26, 2009.

Keynote Speaker, *2006 Euro-NGI Workshop on Visions of Future Generation Networks (EuroView2006),* Würzburg, Germany, August 1, 2006.

Invited Speaker, *Maryland Hybrid Networks Center,* Advanced Networks Colloquium Series, University of Maryland, December 16, 2005.

Keynote Speaker, *Workshop on End-to-End Monitoring Techniques and Services (E2EMON),* Nice, France, May 15, 2005.

Invited Speaker, *Workshop on Internet Measurement, Modeling, and Analysis,* Statistical Research Center for Complex Systems (SRCCS), Seoul National University, Seoul, South Korea, January 11, 2005.

Invited Speaker, *Workshop on Measurement, Modeling and Analysis of the Internet,* Institute for Mathematics and its Applications (IMA), Minneapolis, MN, January 12, 2004.

Keynote Speaker, *First Workshop on Performance of Computational Systems and Communication,* part of the XXII Congress of the Brazilian Computer Society, Florianopolis, Brazil, July 18, 2002.

Invited Speaker, Institute for Pure and Applied Mathematics (IPAM) Program on Large Scale Communication Networks, Los Angeles, CA, March 18-22, 2002.

Invited Speaker, *DIMACS Workshop on Internet and WWW Measurement, Mapping and Modeling,* New Brunswick, NJ, February 13-15, 2002.

Invited Speaker, *Workshop on Job Scheduling Strategies for Parallel Processing,* Cambridge, MA, June 16, 2001.

Invited Speaker, *COST 257 Final Conference,* Würzburg, Germany.

Invited Plenary Speaker, *Performance Tools 2000:* The 11th International Conference on Modelling Techniques and Tools for Computer Performance Evaluation, Schaumburg, Illinois, March 27 - 31, 2000.

Invited Speaker, *Institute for Mathematics and Its Applications Workshop: "Scaling Phenomena in Communication Networks,"* Minneapolis, MN, October 22-24, 1999.

Invited Speaker, Boston University Minority Engineers' Society, 2nd Annual Technical Exposition, Boston, MA, April 10, 1999.

Invited Speaker, Workshop on Intelligent Internet Infrastructure, IBM T.J. Watson Laboratory, Yorktown Heights, NY, March 22, 1999.

Invited Speaker, Workshop on Architectures, Performance, and Applications in Globally Distributed Web Services, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil, March 11 - 12, 1998.

Invited Speaker, Long-Range Dependence and Self-Similar Network Traffic Session, Winter Simulation Conference, Atlanta, GA, Dec. 7-10, 1997

Invited Speaker, DIMACS/NSF Workshop on "End-to-End Network Modeling and Simulations," Princeton University, Princeton, NJ, October 23-25, 1997.

Invited Panelist, Hot Topic Session On Traffic Characterization, ITC-15, Washington DC, June 22-27, 1997

Invited Speaker, IFIP Working Group 7.3 Workshop, June 19-20, Orcas Island, WA.

Invited Panelist, "Engineering Implications of Long-Range Dependence in Teletraffic Data," MASCOTS '97, January 1997, Haifa, Israel

Invited Speaker, Applied Probability Session of Informs, the Operations Research Society, May 1997, San Diego, CA.

Invited Speaker, Joint Research Conference on Statistics in Quality, Industry and Technology, May 29-31 1996, NIST, Gaithersburg, MD. Sponsored by the *American Statistical Association*, the *Institute of Mathematical Statistics*, E. I. du Pont, and the *National Institute of Standards and Technology*.

PROFESSIONAL ACTIVITIES

Executive Steering Committee of the Hariri Institute for Computing and Computational Science & Engineering.

Member of the External Review Visiting Committee for the Department of Computer Science at Amherst College, February 2013.

Organized Workshop: "GPU Programming with CUDA" at Boston University, July 24, 2012.

Member, SIGCOMM Rising Star Award Selection Committee, 2011.

Chair, SIGCOMM Test of Time Award Selection Committee, 2011.

Team Mentor for Conrad Awards, Cyber Security Challenge 2011.

External Judge for FCC's Open Internet Apps Challenge, 2011.

General Co-Chair, CoNEXT 2011.

Internet2 perfSONAR Workshop, Executive Committee, 2010.

Chair, ACM SIGCOMM 2007–2009.

Program Co-Chair, IFIP Networking 2010.

Internet2 Network Research Strategic Planning Team, 2009-present.

Internet2 Network Research Review Committee, `http://www.internet2.edu/networkresearch/nrrc.html`, 2009-present.

Advisory Board of CRAWDAD (Community Resource for Archiving Wireless Data At Dartmouth).

Steering Committee, Passive and Active Measurement Workshop (PAM), 2004-2006.

General Chair, Passive and Active Measurement Workshop (PAM) 2005.

Steering Committee, Internet Measurement Conference, 2003-2007.

ACM SIGCOMM Executive Committee, Award Committee Chair, 2003-2006.

Program Committee Chair, Internet Measurement Conference 2003.

Co-organizer (with C. Lindemann and M. Reiser), Workshop on Internet Performance Modeling, Dagstuhl Castle, Germany, September 26-29, 1999.

Co-organizer (with five others), BU/NSF Workshop on Internet Measurement, Instrumentation, and Characterization; Boston University, August 30, 1999.

Tutorials Chair, SIGMETRICS '99, Atlanta GA.

Program Committees:

- SIGCOMM: 2002, 2006, 2008, 2012
- SIGMETRICS: 1999, 2000, 2002, 2007, 2009, 2010, 2011, 2012
- CoNEXT: 2005, 2007, 2010, 2011
- Performance: 2011
- Internet Measurement Conference: 2002, 2004, 2007, 2010, 2012
- First IMC Workshop on Internet Visualization: 2012
- Passive and Active Measurement Workshop (PAM): 2009, 2010
- Infocom: 2009 (TPC Area Chair), 2010 (TPC Area Chair)
- IFIP Networking: 2009
- NetEval: 2009
- HotMetrics: 2008
- E2EMON: 2007
- First Workshop on Experimental Computer Science: 2007
- Workshop on Mining Network Data (MineNet-06): 2006
- Workshop on Large Scale Network Inference: 2005
- WWW Conference: 2000, 2001, 2002
- 6th Global Internet Symposium: 2001
- 6th International Workshop on Web Caching and Content Distribution: 2001
- Workshop on Caching, Coherence and Consistency: 2001
- Workshop on Network-Related Data Management: 2001
- ITC Specialist Seminar on IP Traffic Management and Modeling: 2000
- SPIE Performance and Control of Network Systems Conference: 1998, 1999
- 18th International Conference on Distributed Computing Systems (ICDCS-98): 1998
- Third IEEE Workshop on Services in Distributed and Networked Environments (SDNE '96): 1996

TUTORIALS AND SHORT COURSES

"Traffic Modeling: Methods and Results for Single Links and Whole Networks," presented at SIG-COMM 2004, Portland OR.

"Traffic Modeling," short course presented at Aalborg University, February 2, 2004.

"Performance Characteristics of World Wide Web Information Systems," presented at SIGMETRICS '97, Seattle WA, June 1997; SIGMETRICS '98, Madison WI, June 1998; and Performance Tools '98, Palma de Mallorca, Spain, September 1998.

CONSULTING

Member of the Technical Advisory Board, Guavus, Inc. 2006 to present.

Consultant, Fujitsu Laboratories of America, Sunnyvale, CA. 2002 to 2004.

Consultant and Expert Witness, in litigation cases involving software patents, software trade secrets, and intellectual property. Ongoing.

Member of the Technical Advisory Board, epicRealm, Inc., Richardson, TX. March 2000 to May 2001.

DOCKET ALARM

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