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CONTACT

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RESEARCH INTERESTS

Network Measurements & Mapping, and Software-Defined Networking.

EDUCATION

Duke University — Durham, NC
Ph.D., Department of Computer Science — August 2010 – November 2016
Dissertation Title: *Head into the Cloud: An Analysis of the Emerging Cloud Infrastructure*
Advisor: Bruce MacDowell Maggs

Washington University in St. Louis — St. Louis, MO
Master of Science in Computer Science — August 2006 – May 2008

Anna University, S.R.M. Engineering College — Chennai, India
Bachelor of Technology in Information Technology — August 2001 – May 2005

PUBLICATIONS

Why is the Internet so slow!?
I. N. Bozkurt, A. Aguirre, B. Chandrasekaran, P. B. Godfrey, G. Laughlin, B. Maggs, A. Singla
Active and Passive Measurement Conference (PAM)
March 2017

Reducing Latency through Page-aware Management of Web Objects by Content Delivery Networks
S. Narayanan, Y. Nam, A. Sivakumar, B. Chandrasekaran, B. Maggs, S. Rao
ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Science
June 2016

Isolating and Tolerating SDN Application Failures with LegoSDN
B. Chandrasekaran, B. Tschaen, and T. Benson
ACM Symposium on SDN Research (SOSR)
March 2016

A Server-to-Server View of the Internet
B. Chandrasekaran, G. Smaragdakis, A. Berger, M. Luckie, and K.C. Ng
ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)
December 2015

A Universal Approach to Data Center Design
A. Akella, T. Benson, B. Chandrasekaran, C. Huang, B. Maggs and D. Maltz
[invited paper] International Conference on Distributed Computing and Networking (ICDCN)
January 2015

On the geography of X-Connects
R. Motamedi, B. Chandrasekaran, B. Maggs, R. Rejaie, W. Willinger
Oregon University, Technical Report CIS-TR-2014-1
May 2015

Alidade: IP Geolocation without Active Probing

B. Chandrasekaran, M. Bai, M. Schoenfield, A. Berger, N. Caruso, G. Economou, S. Gilliss, B. Maggs, K. Moses, D. Duff, K.C. Ng, E. G. Sirer, R. Weber, and B. Wong
Duke University, Technical Report CS-TR-2015-001
January 2015

Back-Office Web Traffic on the Internet
E. Pujol, P. Richter, B. Chandrasekaran, G. Smaragdakis, A. Feldmann, B. Maggs, K.C. Ng
ACM Internet Measurement Conference
November 2014

Towards a Speed of Light Internet
A. Singla, B. Chandrasekaran, P. Brighten Godfrey, B. Maggs
arXiv:1505.03449v1; Computing Research Repository (CoRR)
May 2015

The Internet at the Speed of Light
A. Singla, B. Chandrasekaran, P. Brighten Godfrey, B. Maggs
ACM Workshop on Hot Topics in Networks (HotNets)
October 2014

Tolerating SDN Application Failures with LegoSDN
B. Chandrasekaran, T. Benson
ACM Workshop on Hot Topics in Networks (HotNets)
October 2014

Tolerating SDN Application Failures with LegoSDN
B. Chandrasekaran, T. Benson
[poster] ACM Workshop on Hot Topics in Software Defined Networking (HotSDN)
August 2014

Curing Regular Expressions Matching Algorithms from Insomnia, Amnesia, and Acalculia
S. Kumar, B. Chandrasekaran, J. Turner, and G. Varghese
ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)
November 2007

Talks

Fail without fear: On a Novel Fault-Tolerant SDN Controller Architecture. April 14, 2015
IBM T.J. Watson Research Center
Yorktown Heights, NY.

Peeling through the Structural Layers of the Internet June 13, 2011
Internet MRA Reunion Conference II, IPAM, UCLA
Lake Arrowhead, CA.

Experience

Graduate Research Assistant, *Duke University* Durham, NC
Advisor: Bruce MacDowell Maggs August 2010 - December 2016

Worked on various projects related to network measurements and mapping, software-defined networks, datacenter networks, energy-efficient computing, future Internet architectures, and IP geolocation.

Visiting Researcher, *Technische Universität Berlin.* Berlin, Germany
Mentor: Anja Feldmann June 2015 - September 2015

Designed a measurement study to analyze factors contributing to page-load times of Web pages and identify where significant improvements can be made.

Intern, Custom Engineering, *Akamai Technologies, Inc.* Cambridge, MA
Mentors: Arthur Berger, Keung-Chi Ng, David Duff June 2014 - August 2014

Analyzed traceroute data gathered over a time frame of 16 months between dual-stacked Akamai servers over both IPv4 and IPv6 protocols to provide insights into the state of the Internet's core. We showed that *consistent congestion* (daily oscillations in RTTs) is not the norm in the Internet's core and that routing changes at the AS-level typically do not increase latencies.

Intern, Service Quality Management, *AT&T Research Labs.* Florham Park, NJ
Mentors: He Yan, Nicholas Duffield June 2013 - August 2013

Developed tools to detect *holes* in network service coverage during service outages, and assist in network-infrastructure-recovery efforts.

Intern, Custom Engineering, *Akamai Technologies, Inc.* Cambridge, MA
Mentors: Arthur Berger, Keung-Chi Ng, David Duff May 2012 - August 2012

Worked on improving the geolocation accuracy of *Alidade*, a passive IP geolocation system, and developed tools to query and verify geolocation predictions.

Intern, Custom Engineering, *Akamai Technologies, Inc.* Cambridge, MA
Mentors: Arthur Berger, Keung-Chi Ng, David Duff May 2011 - August 2011

Collaborated on the design and development of *Alidade*, a constraint-based passive IP geolocation system; designed an aggregator to summarize the geolocation predictions of IPs contained in a prefix.

Sr. Technical Consultant, *Perficient, Inc.* Denver, CO
Supervisor: George Hunter June 2008 - July 2010

Designed tools to analyze and tune the performance of application servers running on the HotSpot JVM that routinely buckled under high load. I won an *Extra Mile Award* for the 1^{st} Quarter of 2009, for outstanding performance and contributions.

Intern, Premedia Group, *Vertis Communications, Inc.* Earth City, MO
Mentor: Brian Costlow May 2007 - August 2007

Designed a multi-threaded asynchronous dispatcher framework for handling queries in an in-house RPC environment.

Associate Software Engineer, *Torry Harris Business Solutions, Pvt. Ltd.* Bangalore, India
Supervisors: Meenakshi Sharma, Srivathsa Vijay June 2005 - June 2006

Developed tools to diagnose faults in middleware applications.

In the News

The *Internet at the Speed of Light* project was featured on the front page of San Jose Mercury News, and IT World, and subsequently republished in a few other news outlets: Contra Costa Times, The Bulletin, Valley News, and Star Tribune.

Teaching

Guest Lecture on Hadoop, **Distributed Systems (CPS 512.01).** Spring '15, Spring '14
Instructor: Bruce MacDowell Maggs Graduate-level course, Duke University

Teaching Assistant, **Operating Systems (CPS 310).** Fall '13
Instructor: Jeffrey S. Chase Undergraduate-level course, Duke University

Teaching Assistant, **Discrete Mathematics (CPS 102.1).** Fall '11
Instructor: Bruce MacDowell Maggs Undergraduate-level course, Duke University

Teaching Assistant, **Programming Design and Analysis II (CPS 100E.2).** Spring '11
Instructor: Susan Rodger Undergraduate-level course, Duke University

References *References will be provided on request.*