

## Kaustubh Gadkari

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<b>OBJECTIVE</b>	An full time position in the field of computer networks with special interests in network measurements, scalable forwarding techniques and routing.	
<b>EDUCATION</b>	<i>Ph.D.</i> Computer Science Colorado State University, Fort Collins, CO 80523 Network Security Group Co-advisers: Dr. Christos Papadopoulos and Dr. Daniel Massey	Spring 2011 - Present
	<i>Master's Degree.</i> Computer Science Colorado State University, Fort Collins, CO 80523	Fall 2010
	<i>Bachelor of Engineering.</i> Information Technology University of Pune, Pune, India	Fall 2006
<b>COURSES &amp; PROJECTS</b>	<i>BGPmon</i> <ul style="list-style-type: none"><li>• Implemented a system in Perl to automatically archive BGPmon XML streams.</li><li>• Code is available via CPAN.</li></ul>	Spring 2012 - Present
	<i>Computer Security</i> <ul style="list-style-type: none"><li>• Did a comprehensive study of Mandatory Access Control mechanisms, with a focus on SELinux.</li></ul>	Fall 2007
	<i>Advanced Topics in Computer Security</i> <ul style="list-style-type: none"><li>• Presented and critiqued computer security themed papers, with a focus on privacy models.</li></ul>	Fall 2007
	<i>Advanced Networking</i> <ul style="list-style-type: none"><li>• Created an information distribution system that later inspired parts of BGPmon.</li><li>• Researched the benefits of BGP prefix caching.</li></ul>	Fall 2007
	<i>Advanced Topics In Networking</i> <ul style="list-style-type: none"><li>• Implemented testbed using multiple machines and Cisco 2600 routers.</li><li>• Measured packet rates required to cause the router to drop packets and deny service to hosts.</li></ul>	Spring 2008
	<i>Internet Engineering</i> <ul style="list-style-type: none"><li>• Implemented reliable transport and shortest path routing protocols over UDP on PlanetLab.</li><li>• Developed a CHORD-based P2P network.</li></ul>	Spring 2009
	<i>Image Computation</i> <ul style="list-style-type: none"><li>• Implemented a ray tracer, video stabilizer, and object detection software.</li></ul>	Spring 2010
	<i>Network Data Scientist</i> ThousandEyes, Inc. <ul style="list-style-type: none"><li>• Analysis of network data to analyze network failures and perform root-cause analysis of failures.</li></ul>	July 2015 - Present

*Internship* January 2015 - July 2015  
Ooyala, Inc.

- Worked on design of data center networks for cloud-based video delivery.

*Internship* August 2014 - January 2015  
Naddive LLC, Fort Collins CO 80521

- Worked on packet inspection techniques to improve live-event video delivery over wireless networks.

*Internship* Summer 2011  
Palo Alto Research Center, Palo Alto CA 94304

- Worked on performance measurements of “Content Centric Networking.” (<http://www.ccnx.org>).
- Performance measurements were carried out on PlanetLab (<http://www.planet-lab.org/>) and the Open Network Laboratory (<https://onl.wustl.edu/>).
- Compared performance of CCN with TCP as well as CDNs such as CoralCDN.

*Graduate Research Assistant* Fall 2009 - Present  
Colorado State University, Fort Collins CO 80523

- **Interests:** Network measurements, routing with reduced tables, content-centric networking.
- Researching new designs for reduced forwarding tables.
- Studied the use of fingerprinting custom TCP/IP stacks to detect botnets.
- Studied the characteristics of TCP resets.

*Graduate Teaching Assistant* Fall 2008 - Fall 2009  
Colorado State University, Fort Collins CO 80523

Have assisted the following courses:

- CS 457 - Computer Networking and the Internet.
- CS 475 - Parallel Programming
- CS 155 - Introduction to Unix
- CS 156 - Introduction to C, part 1
- CS 157 - Introduction to C, part 2

*NDN Hub Operator* Fall 2010 - Spring 2013  
Colorado State University, Fort Collins CO 80523

- Setup and maintain one of the two central hubs of the Named Data Networking Testbed.

*Network Security Lab System Administrator* Fall 2006 - Present  
Colorado State University, Fort Collins CO 80523

- Setup and currently maintain the Network Security Group Lab, consisting of 30 rack mounted servers and 5 desktop computers running Ubuntu Linux/FreeBSD and a Cisco router.
- Setup and maintain data capture points at a regional ISP, using specialized packet capture hardware from Endace.

*Visiting Lecturer* 2006  
Symbiosis Institute of Computer Studies and Research, Pune, India

- Taught Linux system administration to students pursuing the Master of Science (Computer Applications) degree.

Undergraduate Research  
SONIX Systems, Pune, India

Fall 2005 - Fall 2006

- Worked on a project to develop a process infrastructure for the Linux kernel to allow transparent process migration across cluster nodes.

## PUBLICATIONS

1. *Pragmatic Router FIB Caching*, Kaustubh Gadkari, M. Lawrence Weikum, Dan Massey and Christos Papadopoulos, Networking 2015, May 2015
2. *A Fresh Look At Scalable Forwarding Through Router FIB Caching*, Kaustubh Gadkari, Dan Massey and Christos Papadopoulos, NANOG 57, February 2013
3. *Dynamics of Prefix Usage at an Edge Router*, Kaustubh Gadkari, Dan Massey and Christos Papadopoulos, 12<sup>th</sup> Passive and Active Measurements Conference (PAM 2011), March 2011
4. *Fingerprinting Custom Botnet Protocol Stacks*, Steve DiBenedetto, Kaustubh Gadkari, Nicholas Diel, Andrea Steiner, Dan Massey and Christos Papadopoulos, Workshop on Secure Network Protocols (NPSec 2010) (in conjunction with ICNP 2010), October 2010
5. *Dynamics of RIB Usage at an Edge Router* (Poster), Kaustubh Gadkari, Steve DiBenedetto, Dan Massey and Christos Papadopoulos, 18<sup>th</sup> International Conference on Network Protocols (ICNP 2010), October 2010
6. *Characterizing TCP Resets in Established Connections*, Nicholas Diel, Kaustubh Gadkari, Steve DiBenedetto, Andrea Steiner and Christos Papadopoulos, Technical Report *CS-08-102*.

## EXPERTISE AND SKILLS

- Programming Languages: C, C++, Perl and Python.
- Operating Systems: Windows, GNU/Linux and OS X.
- Other software: Microsoft Office, R, LaTeX.
- Expertise in network data analysis and working with terabytes of packet-level and flow-level network traces.
- Extensive experience with Perl and Python and automating data visualization with GNUplot and matplotlib.

## SERVICES

- Web and Publications Chair, 4<sup>th</sup> Workshop on Secure Network Protocols, 2008
- Ad hoc reviewer for conferences/workshops like INFOCOM 2013, INFOCOM 2010, GLOBECOM 2011 and NPSec 2008.
- Helped organize CANVAS 2008, which was a computer security vulnerability assessment game for undergraduate students.

## ACADEMIC MEMBERSHIPS

- ACM Student Member
- IEEE Student Member
- Internet Society (ISOC)
- Colorado Chapter of the ISOC