

SUSMIT SHANNIGRAHI

Colorado State University
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Education Colorado State University

2010-Present. Ph.D. in *Computer Science*

Topic: Named Data Networking for Large Scientific Data Management

Committee chair: Christos Papadopoulos

Committee members: Shrideep Pallickara, Indrakshi Ray, Patrick J. Burns, and Inder Monga

2013. Master of *Computer Science*

Jadavpur University

2009. Master of Science in *Computer Science*

Topic: Fast BGP Convergence Following Link/Router Failure

Thesis Supervisor: Swapan Kumar Ray

West Bengal University of Technology

2007. Bachelor of Computer Science and Engineering

Appointments 2013-Present. Research Assistant, Colorado State University, CO

2017. Intern, CableLabs, Louisville, CO

► Investigated NDN as the communication plane for 5G mobile networks

2013. Intern, Lawrence Berkeley National Lab, Berkeley, CA

► Investigated bit-torrent style scientific data retrieval over NDN

2010. Teaching Assistant, Colorado State University, CO

2009. Programmer Analyst, Cognizant Technology Solutions, Kolkata, India

2008. Teaching Assistant, Data Communication and Networking Lab,
Jadavpur University, Kolkata, India

Publications Peer Reviewed Articles

2017. Susmit Shannigrahi, Chengyu Fan, and Christos Papadopoulos. REQUEST AGGREGATION, CACHING, AND FORWARDING STRATEGIES FOR IMPROVING LARGE CLIMATE DATA DISTRIBUTION WITH NDN: A CASE STUDY, In Proceedings of the 4th ACM Conference on Information-Centric Networking. ACM, 2017.

2015. Chengyu Fan, Susmit Shannigrahi, Steve Dibenedetto, et al. MANAGING SCIENTIFIC DATA WITH NAMED DATA NETWORKING, Proceedings of the Fifth International Workshop on Network-Aware Data Management, ACM, 2015

- 2015. Susmit Shannigrahi, Christos Papadopoulos, Edmund Yeh, Harvey Newman, et al. NAMED DATA NETWORKING IN CLIMATE RESEARCH AND HEP APPLICATIONS, In Computing in High Energy and Nuclear Physics (CHEP), 2015.
- 2014. Catherine Olschanowsky, Susmit Shannigrahi, and Christos Papadopoulos. SUPPORTING CLIMATE RESEARCH USING NAMED DATA NETWORKING. In Local & Metropolitan Area Networks (LANMAN), 2014 IEEE 20th International Workshop, pp. 1-6. IEEE, 2014.
- 2010. Swapan Kumar Ray and Susmit Shannigrahi, FAST BGP CONVERGENCE FOLLOWING LINK/ROUTER FAILURE. In Distributed Computing and Networking, pp. 473-484. Springer Berlin Heidelberg, 2010.

Extended Abstracts and Technical Reports

- 2017. Susmit Shannigrahi, Solving Large Scientific Data Management using Named Data Networking, CSU Graduate Student Showcase, Fort Collins, CO
- 2016. Susmit Shannigrahi, SciNet: A Secure Science Data Infrastructure with Named Data Networking, NSF Data Science Workshop, Seattle, WA
- 2015. Susmit Shannigrahi, Named Data Networking for Large Scientific Data Management, Seattle, NSF Data Science Workshop, WA
- 2013. Susmit Shannigrahi, Evaluating Named Data Networking for Large Scientific Data, Poster, ACM student research competition, Supercomputing 2013
- 2013. Susmit Shannigrahi, Evaluating Named Data Networking for Large Scientific Data, Poster, LBNL, CA
- 2013. Susmit Shannigrahi, Daniel Massey, Christos Papadopoulos, **Traceroute for Named Data Networking**, NDN Technical Report

- Grants** 2013. Co-author, NSF grant on "Supporting Climate Modeling Over Named Data Networking (NDN)". (Total award: \$1M., Funded Over 2013-2016, PI: Christos Papadopoulos, Co-PI: Cathie Olschanowsky and David Randall.)

Awards

- 2016. Travel award to participate in NSF Data Science Workshop, UW, Seattle
- 2015. Travel award to participate in NSF Data Science Workshop, UW, Seattle
- 2013. NSF travel award for attending ICNP
- 2013. Best Innovative Poster, NDN for Scientific Data, Lawrence Berkeley National Lab
- 2007. Post Graduate Scholarship from Ministry of Human Resources Development (MHRD), Government of India

Workshops and Presentations

- Workshops**
- 2016. "NSF sponsored graduate data science workshop", University of Washington, Seattle, WA
- 2015. "NSF sponsored graduate data science workshop", University of Washington, Seattle, WA

2014. “Operating Innovative Networks”, LBNL, Berkeley, CA

Presentations

2017. Susmit Shannigrahi, **NDN-Android**, ICN 2017, Berlin, DE
2017. Susmit Shannigrahi, **Request Aggregation, Caching, and Forwarding Strategies for Improving Large Climate Data Distribution with NDN: A Case Study**, ICN 2017, Berlin, DE
2017. Susmit Shannigrahi, Chengyu Fan, Christos Papadopoulos, **Named Data Networking in Scientific Applications**, Memphis, TN
2017. Susmit Shannigrahi, **Revisiting Traceroute for NDN**, Online Seminar
2016. Susmit Shannigrahi, **Applying NDN to large scientific data**, Online Seminar
2016. Susmit Shannigrahi, **Scientific Data Applications in NDN**, Online Seminar
2015. Susmit Shannigrahi, Chengyu Fan, Steve DiBenedetto, Catherine Olschanowsky and Christos Papadopoulos, **Supporting Scientific Applications with NDN**, Denver, CO
2015. Susmit Shannigrahi, Christos Papadopoulos, **Managing Scientific Data with Named Data Networking**, Denver, CO
2015. Susmit Shannigrahi, Chengyu Fan, **NDN for Scientific Data Applications**, Online Seminar
2015. Susmit Shannigrahi, **Managing Scientific Data with NDN**, UCLA, CA
2014. Susmit Shannigrahi, Christos Papadopoulos, **Supporting Climate Applications over Named Data Networking (NDN)**, NOAA, Boulder, CO
2014. Susmit Shannigrahi, Christos Papadopoulos, **NDN-fuse**, Denver, CO
2014. Susmit Shannigrahi, Christos Papadopoulos **NDN-atmos**, CSU, Fort Collins, CO
2013. Susmit Shannigrahi, Steve DiBenedetto, **NDN for Scientific Data**, UCLA, CA
2012. Susmit Shannigrahi, Christos Papadopoulos **NDN-traceroute**, UCLA, CA
2012. Susmit Shannigrahi, Christos Papadopoulos **Benefit of CCN for large data**, UCLA, CA
2012. Susmit Shannigrahi, Daniel Massey, Christos Papadopoulos, **Benefit of CCN for large data**, Boulder, CO
2010. Susmit Shannigrahi, Fedora Medical Spin: In search of a comprehensive solution for healthcare community, Bangalore, India
2009. Susmit Shannigrahi, Redrawing and rewriting the Fedora Distribution process, Bangalore, India

Teaching and Mentoring

Courses Taught

2013. Teaching Assistant for CS370, “Operating Systems”, Instructor: Christos Papadopoulos, 42 local students
2012. Teaching Assistant for CS470DL, “Computer Architecture”, Instructor: Carolyn Schauble, 10 remote students
2012. Teaching Assistant for CT320, “Network and System Administration”, Instructor: Chris Wilcox, 30 students
- 2012 . Designed Assignments for Graduate Students, Using Named Data Networking over GENI, with Ethan Blanton, Sonia Fahmy, Christos Papadopoulos, CSU and

Purdue University

- 2011. Teaching Assistant for CS451, “Operating Systems”, Instructor: Christos Papadopoulos, 66 local students
- 2011. Teaching Assistant for CS451DL, “Operating Systems”, Instructor: Carolyn Schauble, 20 remote students
- 2010. Teaching Assistant for CS155/156/157, “Introduction to Unix and C Programming”, Instructor: Jack Applin, 90 local students

Guest Lectures

- 2017. Named Data Networking and Other topics, CS557, “Advanced Networking”, Colorado State University
- 2017. Named Data Networking, CS457, “Computer Networks”, Colorado State University
- 2016. Named Data Networking, CS457, “Computer Networks”, Colorado State University
- 2016. Several Lectures in CS557, “Advanced Networking”, Colorado State University
- 2014. Several Lectures in CS557, “Advanced Networking”, Colorado State University
- 2013. Named Data Networking in CS457, “Computer Networks”, Colorado State University
- 2013. Several Lectures in CS370, “Operating Systems”, Colorado State University
- 2011. Several Lectures in CS451, “Operating System”, Colorado State University

Student Mentoring

- 2011. Ankur Sinha, Google Summer of Code, 2011

Service Academic Service

- 2017. Technical Program Committee Member, ”NOM: Named-Oriented Mobility”, INFOCOM 2017
- 2017. Technical Program Committee Member, Demos and Posters tracks, ACM ICN 2017

Workshop Facilitation

- 2017. Tutorial: Running IoT Applications over ICN, ICN 2017, Berlin, DE
- 2017. NDN Hackathon, University of Memphis, Memphis, TN
- 2016. NDN Retreat and Hackathon, CSU, Fort Collins, CO
- 2016. NDN Hackathon, UCSD, La Jolla, CA

Reviews

Reviewed papers for ICN, ICFC-Networking, INFOCOM-NOM, ICNP, INFOCOM, CCR

Other Activities Selected Professional and Non-profit activities

- 2011-2016. System Administrator, Network Security Lab, Colorado State University
- 2008-2009. System Administrator, Data Communication and Networking Lab, Jadavpur University, Kolkata, India

2009-2012. Founder and contributor, Fedora Medical Special Interest group, The Fedora Project

2009-2011. Fedora Ambassadors Steering Committee Member, The Fedora Project

2007-2009. Fedora Mirror Manager, WBUT, Kolkata, India

2005-2010. Fedora Ambassador, mentor, Fedora Freemedia leader, The Fedora Project

Non-academic articles

2009. Save Bandwidth by Setting Up a Fedora Mirror, Open Source For You Magazine