Meenakshi Syamkumar

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Research Interests

Computer Networks: measurements and analysis, cloud computing and software-defined networking.

Education

Ph.D. Computer Sciences   Sep 2013 - Present
- University of Wisconsin-Madison, USA
  Adviser: Dr. Paul Barford

M.S. Computer Sciences   Sep 2013 - Present
- University of Wisconsin-Madison, USA
  CGPA 4.0/4.0

B.Tech. Information Technology   Aug 2005 - Apr 2009
- PSG College of Technology, Anna University, India
  CGPA: 3.78/4.0

Publications

- Meenakshi Syamkumar, Paul Barford and Ramakrishnan Durairajan. "Deployment Characteristics of "The Edge" in Mobile Edge Computing", In *Proceedings of Workshop on Mobile Edge Communications (ACM MECOMM, co-located with ACM SIGCOMM)*, Budapest, Hungary, August, 2018

- Meenakshi Syamkumar, Sathiya Kumaran Mani, Ramakrishnan Durairajan, Paul Barford and Joel Sommers. "Wrinkles in Time: Detecting Internet-wide Events via NTP", In *Proceedings of the IEEE IFIP Networking*, Zurich, Switzerland, May, 2018

- Meenakshi Syamkumar, Ramakrishnan Durairajan and Paul Barford. "Bigfoot: A Geo-based Visualization Methodology for Detecting BGP Threats", In *Proceedings of the IEEE Symposium on Visualization for Cybersecurity (VizSec)*, Baltimore, MD, October, 2016.

- Mukta Gupta, Ramakrishnan Durairajan, Meenakshi Syamkumar, Paul Barford and Joel Sommers. "pfs: Parallelized, Flow-based Network Simulation", In *Proceedings of ACM SummerSim*, Chicago, IL, July, 2015

Teaching Experience

Guest Lecture: Advanced Computer Networks (CS740)   Fall 2018
- University of Wisconsin-Madison, USA
  - Paper discussed: On the Constancy of Internet Path Properties [IMW'01]

Instructor: Grandparents University CS Major   Summer 2018
- University of Wisconsin-Madison, USA
  - Platform: Scratch

Instructor: Android Programming Workshop for Freshman   Spring 2018
- University of Wisconsin-Madison, USA
  - Platform: MIT App Inventor

Guest Lectures: Introduction to Computer Networks (CS640)   Fall 2017
- University of Wisconsin-Madison, USA
  - Appication Layer: WWW, HTTP, DNS, SMTP
  - Network Security: Confidentiality, Integrity and Authentication

- **Instructor: Introduction to Data Structures (CS367)** Summer 2017
  University of Wisconsin-Madison, USA
  - Enrollment: 83
  - Course Evaluation: 5.3/7.0
  - Webpage: http://pages.cs.wisc.edu/~ms/cs367-summer2017/
- **Teaching Assistant: Introduction to Data Structures (CS367)** Spring 2014
  University of Wisconsin-Madison, USA
- **Teaching Assistant: Problem Solving for Engineers (CS310)** Fall 2013
  University of Wisconsin-Madison, USA

Professional Experience

- **Graduate Research Assistant** Sep 2013 - Present
  University of Wisconsin-Madison, USA Adviser: Dr. Paul Barford
- **Software Development Intern** Jun 2016 - Aug 2016
  Microsoft
  - Worked on efficient scrubbing of personal information from large scale log files (log entries in the order of millions) for the chat-based workspace, Microsoft Teams.
  - Designed and implemented automatic build validation and upload of new build to the deployment platform that pushes out new build to a select few customers for user experience feedback.
  - Logging reduction - identified the heavy hitters and eliminated heavy hitters with redundant information.
- **Software Intern in Application Development** Jun 2014 - Aug 2014
  Cisco Systems
  - Enabled the Cisco Set Top Box (STB) G8's Dart based implementation to work on browser environment.
  - Implemented Snowflake, the new UI design to STB G6 using JavaScript and evaluated performance measures with respect to existing UI implementation.
- **Software Development Engineer in Test** Jun 2009 - Jul 2013
  Citrix R&D India Pvt L.T.D, India
  - Sanity validation of the NetScaler features like Load Balancing, Content Switching, Authentication, Compression, SSLVPN by configuring multiple VLAN topology and using traffic generation tools like curl, curl-loader.
  - Validated NetScaler virtualization technologies over Citrix XenServer, VMWare ESX, Microsoft HyperV platforms.
  - Played pivotal role in architecting test planning and execution effort for SDX appliance, a multi-tenant NetScaler platform.
  - Architected and scripted the framework for automating distributed NetScaler cluster deployment test cases using XML and Perl.
  - Developed the test topology framework and test strategy for NetScaler virtualization support over Amazon AWS cloud platform.
  - Mentored several new entrants to the team, providing insight into the functionalities of the product, validation methodologies and their job role in the team.
  - Lead the sanity team (consisting of contributors across the globe) in test planning management and automation effort.
- **Software Intern in Test Development** Nov 2008 - Jun 2009
  Citrix R&D India Pvt L.T.D, India
  - Automation of test cases for retrieval of HTTP, TCP and SNMP related live counters.
  - Designed automation structure for curl-loader, an open source utility used for traffic simulation.
  - Testing and automation of compression, HTTP pipelining feature of the NetScaler.
  - Worked on automatic analysis of packet trace utility using Wireshark.

Technology Skills

- *Programming & Scripting Languages*: Python, C, C++, Java, PERL, Matlab, R
- *Databases*: My SQL, Oracle, SQLite
- *Web Technologies*: HTML, CSS, XML, JavaScript
- *Networking*: HTTP, TCP, IPv4/IPv6, SNMP, BGP, NTP
- *Virtualization Technologies*: Citrix XenServer, Microsoft HyperV, VMWare ESX
- *Cloud Technologies*: Amazon AWS
- *GIS*: ESRI ArcGIS

Awards

- Travel grants for SIGCOMM'18, GHC'17, GHC'16, SIGCOMM'16, SIGCOMM'15
- Computer Sciences Departmental Thanks Award for service to GHC booth — May 2018
- Computer Sciences Departmental Thanks Award for service to WACM (ACM-W UW-Madison chapter) — April 2017
- Graduate Peer Mentor Award, Bucky's Awards, UW Madison — April 2017
- Letter of Appreciation at Citrix Systems — Jul 2012
- Anna University **Gold Medalist**, first rank among 65 students — Feb 2010
- Best All Rounder of the Department of Information Technology — Mar 2009
- Outstanding Senior Volunteer award of National Service Scheme, PSG College of Technology — Jul 2008

Service

- Shadow PC: ACM IMC'18
- Graduate Student Advisor of WACM (ACM-W UW-Madison chapter) — Present
- Represented Department of Computer Sciences at ABI GHC 2017's career fair — Oct 2017
- President of WACM (ACM-W UW-Madison chapter) — 2016-2017
- Secretary of WACM (ACM-W UW-Madison chapter) — 2015-2016
- Secretary of Institute of Engineers (IE), Student Chapter, PSG College of Technology — 2008-2009
- Representative of the class, PSG College of Technology — 2007-2008

References

- **Dr. Paul Barford**
  Professor, Department of Computer Sciences
  University of Wisconsin-Madison
  Email: pb@cs.wisc.edu

- **Dr. Ramakrishnan Durairajan**
  Assistant Professor, CIS
  University of Oregon
  Email: ram@cs.uoregon.edu