

Curriculum Vitae

Ramakrishnan Sundara Raman

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Research Interests

Internet Security and Privacy, Internet Measurement, Internet Censorship

Publications

[1] **Censored Planet: An Internet-wide, Longitudinal Censorship Observatory**

R. Sundara Raman, P. Shenoy, K. Kohls, and R. Ensafi

ACM Conference on Computer and Communications Security (CCS), November 2020.

[2] **Investigating Large Scale HTTPS Interception in Kazakhstan**

R. Sundara Raman, L. Evdokimov, E. Wustrow, A. Halderman, and R. Ensafi

ACM Internet Measurement Conference (IMC), October 2020.

[3] **Measuring the Deployment of Network Censorship Filters at Global Scale**

R. Sundara Raman, A. Stoll, J. Dalek, R. Ramesh, W. Scott, R. Ensafi

Network and Distributed System Security Symposium (NDSS), February 2020.

[4] **Decentralized Control: A Case Study of Russia**

R. Ramesh, R. Sundara Raman, M. Bernhard, V. Ongkowitz, L. Evdokimov, A. Edmundson, S. Sprecher, M. Ikram, R. Ensafi

Network and Distributed System Security Symposium (NDSS), February 2020.

Education

PHD STUDENT | AUGUST 2018 - PRESENT | UNIVERSITY OF MICHIGAN, ANN ARBOR, USA | SECURITY AND PRIVACY

Focus: Network Security and Privacy, Internet Measurement

Advisor: Dr. Roya Ensafi

As part of the Censored Planet Lab, I work on improving data security and privacy on the Internet. My current research involves measuring Internet censorship and network interference at global scale. I also work on understanding and analyzing the technologies that enable censorship and surveillance. I lead work on the Censored Planet Observatory, which is a platform for measuring various types of network interference continuously around the world.

Lab Website: <https://censoredplanet.org>

CGPA: 3.95

RESEARCH INTERN | MARCH 2017 - JULY 2017 | UNIVERSITY OF MARYLAND, COLLEGE PARK, USA | SYSTEMS AND NETWORKING

Focus: Internet Measurement

Advisor: Dr. Neil Spring

As an undergraduate research scholar, I worked in the Systems and Networking lab on a project that involved measuring last-mile residential Internet outages in areas affected by severe weather conditions. I worked with the ThunderPing tool, which uses several distributed vantage points to ping residential IP addresses. My goals at UMD were twofold: to develop a real-time system for detecting and visualizing Internet outages and to categorize detected outages by their potential cause, such as network and power outages. I designed and built a web-based visualization that uses ThunderPing's probes to detect and display residential outages in

real time. My group and I also worked on detecting instances of correlated outages, such as those caused by network and power failure, in the data we had collected.

Poster presented at ACM Internet Measurement Conference 2017: "Measuring Last-Mile Internet Reliability During Severe Weather"

BACHELOR OF TECHNOLOGY | JUNE 2013 - MAY 2017 | VELLORE INSTITUTE OF TECHNOLOGY, VELLORE, INDIA | COMPUTER SCIENCE AND ENGINEERING

Rank in branch: 2 out of 648

CGPA: 9.69

Work Experience

GRADUATE STUDENT INSTRUCTOR | AUGUST 2020 - PRESENT | UNIVERSITY OF MICHIGAN, ANN ARBOR, USA

I currently work as the lead graduate student instructor for EECS 588 - the graduate level computer and network security course in the department.

Website: <https://www.eecs.umich.edu/courses/eecs588/>

RESEARCH ASSISTANT | AUGUST 2018 - PRESENT | UNIVERSITY OF MICHIGAN, ANN ARBOR, USA

I work as a graduate student research assistant with Prof. Roya Ensafi on measuring Internet censorship globally.

ASSOCIATE CONSULTANT | MICROSOFT GLOBAL DELIVERY | JULY 24, 2017 – PRESENT

Working in the Business Applications domain to build Enterprise Systems that can deliver value to large organizations around the world.

INTERN | MICROSOFT GLOBAL DELIVERY | MAY 30, 2016 – JULY 22, 2016

Summer Internship at Microsoft Global Delivery, Hyderabad where I worked as a Data Analytics Consultant. The internship involved a team effort to integrate data analytics into Microsoft's project management tool. The tool was built on ASP.NET and Microsoft's Power BI tool was utilized to make interactive reports that provided valuable insight to the users.

INTERN | OSI CONSULTING PRIVATE LIMITED | JUNE 2015

Summer Internship and training in PL/SQL at OSI Consulting Private Limited, Hyderabad. The internship involved training in PL/SQL and Oracle Software with qualified internal employees. Multiple projects and assignments were completed during the period of internship.

Presentations:

[1] **Censored Planet: Measuring Internet censorship remotely**

OONI Internet Measurement Village (IMV) 2020, June 2020

<https://youtu.be/5lgnvR42cMQ>

[2] **Measuring the Deployment of Network Censorship Filters at Global Scale**

Network and Distributed System Security Symposium (NDSS), February 2020

<https://youtu.be/R8VlHOwakQk>

Projects

CENSOREDPLANET OBSERVATORY | AUGUST 2018 – PRESENT

I am the primary developer and maintainer of the Censored Planet Observatory, which is a platform for measuring Internet censorship and network interference continuously and globally. The observatory uses thousands of remote infrastructural vantage points from over 220 countries to continuously monitor

disruption tactics used by authorities around the world. All data collected using the Observatory is made public for use by researchers and policy-makers, and we have already released several reports based on data from the Observatory. I also maintain the Observatory website, which contains several visualizations of our data.

Website: <https://censoredplanet.org/observatory>

THUNDERPING LIVE | MARCH 2017 – JULY 2017

A live version of the tool ThunderPing that measures residential Internet outages in areas affected by severe weather. The website was built using Ruby on Rails. The website quickly analyses data recorded by the different vantage points and shows the number of IPs up and number of IPs down on a map. It also provides details such as the weather alerts issued for a county and state-wise outage statistics.

Service

OUTREACH CHAIR AT CSEG | JUNE 2020 – PRESENT

I currently work as the Outreach Chair at my department's graduate student organization. My responsibilities include arranging and managing outreach events throughout the year that aimed at spreading knowledge about computer science research in various schools, colleges and groups.