Ramakrishnan Sundara Raman

Assistant Professor, Computer Science and Engineering, University of California Santa Cruz

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I am an Assistant Professor in the CSE department at UC Santa Cruz, with expertise in computer security and networking research. My expertise lies in building empirical methods to detect, analyze and prevent large-scale security and privacy threats to Internet users. My research involves longitudinally measuring connection tampering attacks at global scale and has helped produce the Censored Planet Observatory. I am the recipient of a FOCI Rising Star Award, an OTF Information Controls Fellowship, and an IRTF Applied Networking Research Prize.

Positions

- **University of California Santa Cruz**
  Department of Computer Science and Engineering, Baskin School of Engineering
  Assistant Professor   Jul 2024 – Present

- **Cloudflare**, *Research Intern*   Jul 2022 – Sep 2022

- **The Citizen Lab**, *OTF Senior ICFP Fellow*   Nov 2021 – Jul 2022

- **Microsoft**, *Associate Consultant*   Jul 2017 – May 2018

- **University of Maryland**, *Research Intern*   Mar 2017 – Jul 2017

Education

2018 – 2024	🔖 **Ph.D. in Computer Science, University of Michigan** in Computer Science and Engineering **Advisor:** Prof. Roya Ensafi **Thesis title:** Global and Longitudinal Investigation of Network Connection Tampering **CGPA:** 3.95 out of 4
2013 – 2017	🔖 **Bachelor of Technology, Vellore Institute of Technology** in Computer Science and Engineering **Project Title**: Measuring Last-Mile Internet Reliability During Severe Weather **CGPA**: 9.69 out of 10 **Rank in CSE**: 2 out of 648

Conference Publications

- **Digital Discrimination of Users in Sanctioned States: The Case of the Cuba Embargo** 🔗
  A. Ablove, S. Chandrashekaran, H. Le, **R. Sundara Raman**, R. Ramesh, H. Oppenheimer, R. Ensafi
  USENIX Security Symposium, August 2024
  🏆 Distinguished Paper Award

- **Modeling and Detecting Internet Censorship Events** 🔗
  E. Tsai, **R. Sundara Raman**, A. Prakash, R. Ensafi
  Network and Distributed System Security Symposium (NDSS), February 2024

- **Global, Passive Detection of Connection Tampering** 🔗
  R. Sundara Raman, L.H. Merino, K. Bock, M. Fayed, D. Levin, N. Sullivan, L. Valenta
  ACM SIGCOMM, September 2023

- **Network Responses to Russia's Invasion of Ukraine in 2022: A Cautionary Tale for Internet Freedom** 🔗
  R. Ramesh[*], **R. Sundara Raman***, A. Virkud, A. Dirksen, A. Huremagic, D. Fifield, D. Rodenburg, R. Hynes, D. Madory, R. Ensafi
  USENIX Security Symposium, August 2023
  🏆 FOCI Best Practical Award 2024

- **CERTainty: Detecting DNS Manipulation using TLS Certificates** 🔗
  E. Tsai, D. Kumar, **R. Sundara Raman**, G. Li, Y. Eiger, R. Ensafi
  Privacy Enhancing Technologies Symposium (PETS), July 2023

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[*]Both authors contributed equally to this research

- **Network Measurement Methods for Locating and Examining Censorship Devices** 🔗
  <u>R. Sundara Raman</u>*, M. Wang*, J.Dalek, J. Mayer, and R. Ensafi
  ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT), December 2022
  🏆 IRTF Applied Networking Research Prize

- **A Large-scale Investigation into Geodifferences in Mobile Apps** 🔗
  R. Kumar, A. Virkud, <u>R. Sundara Raman</u>, A. Prakash, and R. Ensafi
  USENIX Security Symposium, August 2022

- **Lost in Transmission: Investigating Filtering of COVID-19 Websites** 🔗
  A. Vyas, <u>R. Sundara Raman</u>, N. Ceccio, P. Lutscher, and R. Ensafi
  Financial Cryptography and Data Security (FC), March 2021

- **Censored Planet: An Internet-wide, Longitudinal Censorship Observatory** 🔗
  <u>R. Sundara Raman</u>, P. Shenoy, K. Kohls, and R. Ensafi
  ACM Conference on Computer and Communications Security (CCS), November 2020

- **Investigating Large Scale HTTPS Interception in Kazakhstan** 🔗
  <u>R. Sundara Raman</u>, L. Evdokimov, E. Wustrow, A. Halderman, and R. Ensafi
  ACM Internet Measurement Conference (IMC), October 2020
  🏆 Best Paper Award Nominee

- **Measuring the Deployment of Network Censorship Filters at Global Scale** 🔗
  <u>R. Sundara Raman</u>, A. Stoll, J. Dalek, R. Ramesh, W. Scott, R. Ensafi
  Network and Distributed System Security Symposium (NDSS), February 2020

- **Decentralized Control: A Case Study of Russia** 🔗
  R. Ramesh, <u>R. Sundara Raman</u>, M. Bernhard, V. Ongkowijaya, L. Evdokimov, A. Edmundson, S. Sprecher, M. Ikram, R. Ensafi
  Network and Distributed System Security Symposium (NDSS), February 2020
  🏆 CSAW'20 Applied Research Competition North America Top 10 Paper

Workshop Publications

- **Advancing the Art of Censorship Data Analysis** 🔗
  <u>R. Sundara Raman</u>, A. Virkud, S. Laplante, V. Fortuna, R. Ensafi
  Free and Open Communications on the Internet (FOCI), February 2023

- **A Multi-Perspective View of Internet Censorship in Myanmar** 🔗
  R. Padmanabhan, A. Filastò, M. Xynou, <u>R. Sundara Raman</u>, K. Middleton, M. Zhang, D. Madory, M. Roberts, and A. Dainotti
  Free and Open Communications on the Internet (FOCI), August 2021

Awards

Research	🔖	**USENIX Security 2024 Distinguished Paper Award Award** 🔗 August 2024
	🔖	**FOCI'24 Best Practical Award** 🔗 July 2024
	🔖	**FOCI'23 Rising Star Award** 🔗 July 2023
	🔖	**IRTF Applied Networking Research Prize (ANRP) 2023** 🔗 January 2023
	🔖	**University of Michigan CSE Graduate Student Honors Runners Up Award** 🔗 November 2020
	🔖	**ACM IMC 2020 Best Paper Award Nominee** October 2020
Fellowships & Grants	🔖	**Rackham Predoctoral Fellowship** 🔗 March 2023

	OTF Information Controls Fellowship (ICFP) 🔗 November 2021
	Travel Grants–ACM IMC 2022, USENIX Security 2020, and Citizen Lab Summer Institute 2019
Teaching & Service	**North Campus Deans' MLK Spirit Award 2023** 🔗 January 2023
	University of Michigan CSE GSI Honorable Mention Award 🔗 August 2021

Teaching

Spring 2025	**Instructor, CSE 156, UC Santa Cruz** Topic: Network Programming (Undergraduate)
Winter 2025	**Instructor, CSE 153, UC Santa Cruz** Topic: Network Security and Privacy (Undergraduate)
Fall 2024	**Instructor, CSE 253, UC Santa Cruz** Topic: Network Security (Graduate)
March 2023	**Guest Lecturer, CS 4973, Northeastern University** Topic: Censorship and Circumvention
January 2023	**Substitute Instructor, EECS 588, University of Michigan** Topic: Computer and Network Security
March 2022	**Guest Lecturer, EECS 588, University of Michigan** Topic: Censorship and Circumvention
Fall 2020	**Graduate Student Instructor (GSI), EECS 588, University of Michigan** Topic: Computer and Network Security 🏆 GSI Honorable Mention Award

Mentoring

○ **Graduate Students:** Likith Rahul Krishnamurthy (2025-Present), Riya Aggarwal (2025-Present), Rohit Nagubandi (2024-Present), Kevin Wang (Michigan, 2023), Elisa Tsai (Michigan, 2020 - 2023)

○ **Undergraduate Students:** Peter Dobbins (2025-Present), Dominick Rangel (2024 - Present), Leonardo Gallego (2024 - Present), Prasiddh Pooskur (2024 - Present), Ryan Sangha (2024 - Present), Felicity Shih (2024 - Present), Brian Huang (2024 - Present), Sriya Katreddi (2024 - Present), Nadav Oren (Michigan, 2023), Apurva Virkud (Michigan, 2020 - 2022), Anjali Vyas (Michigan, 2020 - 2021), Prerana Shenoy (Michigan, 2019 - 2020)

Talks

○ **Invited Talk: Network Measurement Methods for Locating and Examining Network Censorship Devices** 🔗
 IETF 118, November 2023

○ **Conference Talk: Global, Passive Detection of Connection Tampering** 🔗
 ACM SIGCOMM, September 2023

○ **Conference Talk: Network Responses to Russia's Invasion of Ukraine in 2022: A Cautionary Tale for Internet Freedom**
 Usenix Security Symposium, August 2023

○ **Workshop Talk: Advancing the Art of Censorship Data Analysis**
 Free and Open Communications on the Internet (FOCI), February 2023

○ **Lightning Talk: Exploring Internet censorship through the Censored Planet Dashboard**
 Open Technology Fund (OTF), January 2023

○ **Conference Talk: Network Measurement Methods for Locating and Examining Network Censorship Devices**
 Conference on emerging Networking EXperiments and Technologies (CoNEXT 2022), December 2022

○ **Tech Demo: Exploring Internet censorship with the Censored Planet Dashboard** 🔗
 RightsCon 2022, June 2022

- ○ **Symposium Talk: Censored Planet: An Internet-wide, Longitudinal Censorship Observatory**
  The 5th Annual Data for Public Good Symposium, March 2022

- ○ **Invited Talk: Censored Planet Community Webinar 2021** 🔗
  Censored Planet, October 2021

- ○ **Invited Talk: Censored Planet: An Internet-wide Longitudinal Observatory**
  NDSS DNS Privacy Workshop (DNSPriv), February 2021

- ○ **Conference Talk: Censored Planet: An Internet-wide Longitudinal Observatory** 🔗
  ACM Conference on Computer and Communications Security (CCS), November 2020

- ○ **Conference Talk: Investigating Large Scale HTTPS Interception in Kazakhstan** 🔗
  ACM Internet Measurement Conference (IMC), October 2020

- ○ **Invited Talk: Censored Planet: Measuring Internet censorship remotely** 🔗
  OONI Internet Measurement Village (IMV), June 2020

- ○ **Conference Talk: Measuring the Deployment of Network Censorship Filters at Global Scale** 🔗
  Network and Distributed System Security Symposium (NDSS), February 2020

Reports and Blogposts

- ○ **A Global Assessment of Third-Party Connection Tampering**
  The Cloudflare Blog, September 2024
  🔗 https://blog.cloudflare.com/connection-tampering/

- ○ **Measuring Connection Tampering Around the World**
  Internet Society Pulse Blog, October 2023
  🔗 https://pulse.internetsociety.org/blog/measuring-connection-tampering-around-the-world

- ○ **Making Censorship Data More User Friendly**
  Internet Society Pulse Blog, May 2023
  🔗 https://pulse.internetsociety.org/blog/making-censorship-data-more-user-friendly

- ○ **Profiling Internet Censors: Methods to Measure and Locate Censorship Devices**
  Open Technology Fund (OTF), December 2022
  🔗 https://www.opentech.fund/news/profiling-internet-censors-methods-to-measure-and-locate-censorship-devices/

- ○ **An analysis of a large-scale HTTPS interception**
  APNIC Blog, February 2021
  🔗 https://blog.apnic.net/2021/02/15/an-analysis-of-a-large-scale-https-interception/

- ○ **US Government and military websites are geoblocked from Hong Kong and China**
  Censored Planet, August 2020
  🔗 https://censoredplanet.org/hongkong

Posters

- ○ **Censored Planet: An Internet-wide, Longitudinal Censorship Observatory**
  Midwest Security Workshop, April 2019

- ○ **Measuring Last Mile Internet Reliability During Severe Weather**
  ACM Internet Measurement Conference (IMC), November 2017

Certifications

- ○ **2023 Rackham-CRLT Preparing Future Faculty Seminar** 🔗
  University of Michigan, June 2023

- ○ **Introduction to Data Science in Python** 🔗
  University of Michigan Coursera, June 2023

Service

Chairing   ■ **Session Chair at Free and Open Communications on the Internet (FOCI) 2021** 🔗

Reviewing   ■ **TPC Member, ACM Internet Measurement Conference (IMC) 2025** 🔗

■ **TPC Member, Free and Open Communications on the Internet (FOCI) 2025** 🔗

■ **TPC Member, IEEE Symposium on Security and Privacy (S&P) 2025** 🔗

■ **TPC Member, ACM Internet Measurement Conference (IMC) 2024** 🔗

■ **TPC Member, IEEE Symposium on Security and Privacy (S&P) 2024** 🔗

■ **TPC Member, Free and Open Communications on the Internet (FOCI) 2024** 🔗

■ **Reviewer, 6th International Conference on Computer Science and Application Engineering (CSAE) 2022**

■ **TPC Member, ACM SIGCOMM 2021 Workshop on Free and Open Communications on the Internet (FOCI)** 🔗

Leadership   ■ **Outreach Chair at CSEG, UM CSE graduate student organization**
June 2020 – May 2022
My responsibilities included arranging and managing outreach events throughout the year that aimed at spreading knowledge about computer science research in various schools, colleges and groups.
🏆 Deans' MLK Spirit Award 2023

■ **Security Seminar Host, UCSC**
September 2024 – Present

■ **Administrator of the Security Reading Group (SECRIT) in UM CSE**
June 2019 – June 2021