Reethika Ramesh

PhD Candidate, *University of Michigan*

Research Interests:
Security and Privacy
Internet Measurement

May 25, 2022

https://reethika.info

Education

- Ph.D in Computer Science, University of Michigan, 2018—Present
  Advisor: Prof. Roya Ensafi
  My research interests are network security, privacy, and Internet measurement. I am currently developing the VPNalyzer project, an academic research project that aims to analyze the VPN ecosystem through large-scale data-driven investigations and quantitative and qualitative studies. GPA – 3.90/4.0
- B.Tech. in Computer Science and Engineering, VIT University, 2013—2017
  Final semester spent abroad as a research intern at the University of Maryland. CGPA: 9.38/10

Publications and Broader Impact

[5] **OpenVPN is Open to VPN Fingerprinting**
Diwen Xue, Reethika Ramesh, Arham Jain, Michalis Kallitsis, J. Alex Halderman, Jedidiah R. Crandall, and Roya Ensafi
To Appear In *31st USENIX Security Symposium 2022* **(USENIX Sec '22)** .

[4] **VPNalyzer: Systematic Investigation of the VPN Ecosystem**
Reethika Ramesh, Leonid Evdokimov, Diwen Xue, and Roya Ensafi
29th Network and Distributed Systems Symposium **(NDSS'22)** , Apr 2022.

Our testing methodology and the VPNalyzer tool was used by Consumer Reports as the first line of systematic investigation to evaluate a set of popular VPNs. Our work was featured in a white paper and our insights were quoted in two articles written by Consumer Reports [1, 2]. Based on our results from the paper, we filed over 26 responsible disclosures with VPN providers.

[3] **Throttling Twitter: An Emerging Censorship Technique in Russia**
Diwen Xue, Reethika Ramesh, ValdikSS, Leonid Evdokimov, Andrey Viktorov, Arham Jain, Eric Wustrow, Simone Basso, and Roya Ensafi
21st ACM Internet Measurement Conference **(IMC'21)** , Nov 2021.

(Recognized as the Highest Scoring Short Paper at IMC'21) Our work was reported in over 15 news outlets globally during April 2021 including the front page of New York Times Ars Technica, BBC, and Meduza, after we published our research report detailing the technology used in the throttling of Twitter in Russia in March 2021.

[2] **Decentralized Control: A Case Study of Russia**
Reethika Ramesh, Ram Sundara Raman, Matthew Bernhard, Victor Ongkowijaya, Leonid Evdokimov, Anne Edmundson, Steven Sprecher, Muhammad Ikram, and Roya Ensafi
27th Network and Distributed Systems Symposium **(NDSS'20)** , Feb 2020.

Finalist and among the Top 10 papers for the US–Canada region at the CSAW '20 Applied Research Competition. Our work was widely reported in over **85 news outlets globally** during 6-8 November 2019, including Associated Press, NYT, and CPJ after we published a report about the work.

[1] **Measuring the Deployment of Network Censorship Filters at Global Scale**
Ram Sundara Raman, Adrian Stoll, Jakub Dalek, Reethika Ramesh, Will Scott, and Roya Ensafi
27th Network and Distributed Systems Symposium **(NDSS'20)** , Feb 2020.

Workshop Publications and Talks

[w2] **Investigating the VPN Recommendation Ecosystem**
Reethika Ramesh, Armin Huremagic, Chad Sharp, Roya Ensafi
IEEE SPW 6th Workshop on Technology and Consumer Protection **(ConPro 2022)** , May 2022.

[w1] **Building the VPNalyzer System**
Reethika Ramesh
Talk given at *: Workshop on Learning from Authoritative Security Experiment Results* **(LASER)** , April 2022.

Experience

- **Research Intern, Brave Software** (*Summer of 2022*)
  I will be interning with Dr. Philipp Winter and the Brave Software Research team, Summer of 2022.
- **Research Assistant, University of Michigan** (2018–present)
  I am a graduate student in Computer Science at the University of Michigan where I work with my advisor Prof. Roya Ensafi. My research interests are digital security and privacy. I am currently developing the VPNalyzer project to empower users and conduct systematic, rigorous, data-driven investigations of the evolving ecosystem and bridge the gap between VPN users and providers through quantitative and qualitative studies, in collaboration with Consumer Reports and the Open Technology Fund.
- **Associate Consultant, Microsoft India** (Jul 2017–May 2018)
  I was as an Associate Consultant in the Apps domain in Microsoft India Global Delivery. I worked on developing applications for our clients that required integrating their business needs with the different technologies in the Microsoft Stack.
- **Research Intern, University Of Maryland** (Feb–Jul 2017)
  Advisor: Prof. Neil Spring
  While interning as an undergraduate researcher in the Systems and Networking Lab at the University of Maryland, College Park, I performed a longitudinal analysis of Internet outages using ThunderPing's data. ThunderPing uses active probing methods from remote vantage points to detect residential Internet connectivity failures during inclement weather conditions.

Presentations

Invited Talks

[T6] **Research in Security and Privacy**
EECS 183, April 2022. Presented at my research at EECS 183 at a session, supported by the Renew CS grant, aimed at encouraging women and non-binary students to major in CS.

[T5] **Panelist, Consumer Reports Workshop Exploring VPNs**
Virtual Webinar, March 2021. Served as a panelist alongside my advisor, Prof. Ensafi at the webinar with over 1,500 users in attendance

[T4] **Decentralized Control: A Case Study of Russia**
CSAW'20 Applied Research Competition, November 2020. The paper was a finalist and was among the Top 10 papers for the US-Canada region at the CSAW'20 ARC

[T3] **Decentralized Information Control in Russia and its Broader Impacts**
Next Generation Democracy Cafe, August 2020.

[T2] **PhD Lightning Talk**
Mozilla Security Research Summit, May 2019.

[T1] **Research in Ensafi Lab**
Research Process Workshop, November 2018. Presented at the Research Process Workshop about the our work in the Ensafi Lab, and served as a panelist for research done in the software lab for an event organized by Girls Encoded.

Posters

- **Censored Planet**
  Midwest Security Workshop, April 2019.
- **Measuring Last Mile Internet Reliability During Severe Weather** AMC Internet Measurement Conference, November 2017.

Research Reports

- **Throttling of Twitter in Russia** —April 06, 2021
- **US Government and military websites are geoblocked from Hong Kong and China** —August 10, 2020
- **Censorship in Russia** —November 06, 2019

Awards

2020 – Selected for the CRA-WP Grad Cohort for Women with Travel Grant, sponsored by my department and CRA. *(Postponed to 2021 due to COVID'19)*

2020 – My paper Decentralized Control: A Case Study of Russia was selected as a finalist and was among the Top 10 papers for the US-Canada region at the CSAW '20 Applied Research Competition.

2020 – USENIX Security '20 Student Grant, sponsored by USENIX and other donors

2020 – Network and Distributed System Security Symposium (NDSS) Student Travel Grant, sponsored by Internet Society

2019 – Citizen Lab Summer Institute Travel Grant, sponsored by Open Technology Fund

2019 – IEEE S&P Student Travel Grant, sponsored by IEEE

2019 – IEEE GREPSEC Workshop Travel Grant, sponsored by NSF and industry donors

Teaching

- **Graduate Student Instructor, Computer and Network Security** *(Fall 2020)*
  EECS 588, University of Michigan
  My responsibilities included leading lectures and discussions, inviting and facilitating guest lectures, helping students with their projects, holding office hours, and grading.

Professional Service

Program Committee

- ACM SIGCOMM 2021 Workshop on Free and Open Communications on the Internet (FOCI'21)

Organizing USENIX Workshop FOCI'20

- **Student Organizer** (Aug 11, 2020)
  I served as the Student Organizer for the 10th USENIX Workshop on Free and Open Communications on the Internet (FOCI'20) co-located with USENIX Security 20.

ECSEL+

- **Treasurer** (2019-20, 2020-21)
  ECSEL+ is a group to support graduate women students and gender minorities in Computer Science at the University of Michigan. I was elected to the Treasurer position twice: 2019-20, 2020-21.

External Reviewer

- ACM Internet Measurement Conference (IMC'21)
- 30th USENIX Security Symposium (Sec'21)
- ACM Internet Measurement Conference (IMC'20)
- 20th Privacy Enhancing Technologies Symposium (PETS'20)

Explore Computer Science Research

- **Panelist** (Apr 21, 2021)
  I served as panelist on an ExploreCSR program organized by Girls Encoded at the University of Michigan. This event helps undergraduate women students and students from underrepresented minorities explore a potential career path in research in computer science.

FEMMES Explore Event

- **Activity Leader** (Apr 10, 2021)
  I served two weekend sessions as an activity leader for the FEMMES Explore Event organized by CSEG with FEMMES at the University of Michigan. This involved (virtually) interacting with and teaching middle-school students about CS and helping them design an algorithm for a computer game.

References

Roya Ensafi, Assistant Professor, University of Michigan, ensafi@umich.edu