

## Research Interests

Healthcare Cybersecurity, Email/Enterprise Security, Internet Cyber Crime.

## Education

2021 – Now **University of California, San Diego**, *Doctor of Philosophy in Computer Science*.

Advisors: [Stefan Savage](#) and [Geoffrey M Voelker](#)

2016 – 2020 **PES University, Bangalore**, *Bachelor of Technology in Computer Science*.

Graduated First Class with **Honors**. 9.6/10 GPA.

## Publications

### Work in Progress

Jerry Yu, Yibo Wei, **Sumanth Rao**, Mohak Vaswani, Jefferson Chien, Christian Dameff, Nishant Bhaskar, and Aaron Schulman. "Alarming Alarms: Analyzing the Security of Dealer-Installed Car Alarm Systems". (*Under Review*), 2025.

Jeffrey L. Tully, **Sumanth Rao**, Rodney A. Gabriel, Chris Longhurst, Stefan Savage, Geoffrey M Voelker, and Christian J. Dameff. "Disruptions of Healthcare Networks Associated with the CrowdStrike Technology Outage". (*Under Review*), 2025.

Katherine Izhikevich, Ben Du, **Sumanth Rao**, Alisha Ukani, and Liz Izhikevich. Trust, but verify, operator-reported geolocation. (*Under Review*), 2025.

### Peer-Reviewed Papers

**Sumanth Rao**, Enze Liu, Grant Ho, Geoffrey M. Voelker, and Stefan Savage. "Unfiltered: Measuring Cloud-based Email Filtering Bypasses". In *Proceedings of the ACM Web Conference (WWW)*, 2024 – **Oral Presentation**.

Ben Du, Katherine Izhikevich, **Sumanth Rao**, Guatam Akiwate, Cecilia Testart, Alex C. Snoeren, and kc claffy. "IRRegularities in the Internet Routing Registry". In *Proceedings of the ACM on Internet Measurement Conference (IMC)*, 2023.

Enze Liu, **Sumanth Rao**, Sam Havron, Grant Ho, Stefan Savage, Geoffrey M Voelker, and Damon McCoy. "No Privacy Among Spies: Assessing the Functionality and Insecurity of Consumer Android Spyware Apps". In *Proceedings on Privacy Enhancing Technologies (PoPETS)*, 2023 – **FTC PrivacyCon 2024**.

## Skills

Languages Most comfortable in Python, C/C++; Familiar with Rust, Shell script, Go, MySQL, JS, HTML/CSS.

Tools Familiar with tools for reverse engineering (JADX), measurement (ZMap, ZDNS, Censys, pDNS), Network Intrusion Detection/Threat hunting (Wireshark, MITMProxy), and others (Git, Docker, Vim).

---

## Industry Experience

- Jun 2022 **Google, San Francisco** *Software Engineer Intern*  
to Sep 2022
  - Improved debugging experience when spawning new Borg instances within *Virtual Cluster*, mimicking user experience in Google's production environment.
  - Simplified proxying to web resources within *Virtual Cluster* instances, reducing the time overhead 7-fold.
- Aug 2020 **Citrix, Bangalore** *Software Engineer I*  
to Aug 2021
  - Reduced the Citrix License Server testing resource utilization by 50% on Citrix's Xen Hypervisor, by re-designing services using Docker-based microservices.
  - Awarded the highest level (black belt) of Citrix software security certification.

---

## Research in the News

- Mar 2024 **Email Filtering Attack** – <https://www.darkreading.com/cloud-security/cloud-email-filtering-bypass-attack> (DarkReading, ACM TechNews)
- May 2023 **Android Spyware Study** – <https://today.ucsd.edu/story/spywarestudy2023> (UCSD News, KPBS, CACM News, CTV News)

---

## Scholarships and Awards

- 2024 GPSA fall travel grant award for WWW 2024 in Singapore.
- 2023 Travel grant recipient for IMC 2023 in Montréal, Canada.
- 2023 Travel grant recipient for PETS 2023 in Lausanne, Switzerland.
- 2020 – 2021 JN Tata Endowment Scholar — Recipient of the scholarship to pursue graduate studies in Computer Science at UC San Diego.
- 2016 – 2020 MRD Merit Scholarship — Recipient of the scholarship in recognition of performing within the top 20% of the cohort at PES University.
- 2019 Pravega IBM Hackathon, Indian Institute of Science, Winners — Developed NLP models that determine the authenticity of news articles.
- 2018 Idea-Pitch Contest, Center of Entrepreneurship and Innovation, Winners — Short bootcamp on validating startup ideas, creating business models, and pitching to investors.

---

## Invited Talks

- May 2024 **"Measuring Cloud-based Email Filtering Bypasses"** – [https://youtu.be/irhftyMU9As?si=Er0IVR7q-B6\\_bThT](https://youtu.be/irhftyMU9As?si=Er0IVR7q-B6_bThT)
- Mar 2024 **"FTC's PrivacyCon 2024, Panel 6: Mobile Device Security "** – <https://kvgo.com/ftc/PrivacyCon-March-6-2024>
- Nov 2022 **"Having a great GSoC as an Open Source Newbie!"** – <https://www.youtube.com/watch?v=dPUAEZVBrJg&t=729s>

---

## Miscellaneous

- Aug 2020 **Zulip** *Open Source Contributor & Google Summer of Code Alumni*  
to Aug 2022
  - Core founder of the Zulip Terminal Client, and contributor to Zulip Server and WebApp, covering Python, Django, and JavaScript source code.
- Sep 2022 **VP External, UCSD Jacobs Graduate Student Council**  
to Sep 2023
  - Led on-campus recruitment drives for Intel, ASML, and Boeing with ~ 250 student participants.