Karthika Subramani

Research Scientist II
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Education

2015-08 - 2021-12	**Doctor of Philosophy**, Computer Science | *University of Georgia - Athens, GA* Advisor: Roberto Perdisci Advisory Committee: Roberto Perdisci, Kyu Hyung Lee, Lakshmish Ramaswamy, Le Guan
2008-08 – 2012-05	**Bachelor of Engineering**, Computer Science | *SREC College – Tamil Nadu, India* Graduated in top 5%. Was an elected member of CSI student chapter

Research Experience

2022-07 – Present

Research Engineer II │ *Astrolavos Lab @ Georgia Institute of Technology*
- Advisors: Manos Antonakakis, Roberto Perdisci
- Working on implementation of behavior-based Network IDS by applying Machine Learning and Deep Learning Techniques
- Mentoring students on network traffic analysis and classification, social engineering and web crawling

2022-01 – 2022-06

Post-Doctoral Researcher │ *NIS Lab @ University of Georgia*
- Conducted novel research on Web and Network Security topics
- Published 2 papers related to Security of Service Workers and Phishing attacks
- Assisted with the supervision of the other members of the laboratory

2015-08 - 2021-12

Research Assistant │ *NIS Lab @ University of Georgia*
- Advisor: Roberto Perdisci
- PhD Thesis: *"Investigating the Security of Emerging Web Technologies and their Role in Social Engineering Attacks"*
- Performed research and developed automated system to study, measure and classify data related to DDoS attacks in IXP, social engineering attacks such as phishing attacks, spams, malvertisements and abuse of service workers and Progressive Web Apps
- Applied various ML classification and clustering techniques to analyze data

Publications

IMC '22   Subramani, Karthika, William Melicher, Oleksii Starov, Phani Vadrevu, and Roberto Perdisci. "PhishInPatterns: measuring elicited user interactions at scale on phishing websites." In Proceedings of the 22nd ACM Internet Measurement Conference, 2022.

EUROS&P '22   Subramani, Karthika, Jordan Jueckstock, Alexandros Kapravelos, and Roberto Perdisci. "SoK: Workerounds-Categorizing Service Worker Attacks and Mitigations." In 2022 IEEE 7th European Symposium on Security and Privacy (EuroS&P), IEEE, 2022.

PMC '22   Subramani, Karthika, Omid Setayeshfar, Xingzi Yuan, Raunak Dey, Dezhi Hong, In Kee Kim, and Kyu Hyung Lee. "Privacy invasion via smart-home hub in personal area networks." Pervasive and Mobile Computing 85 (2022).

DIMVA '21   Subramani, Karthika, Roberto Perdisci, and Maria Konte. "Detecting and Measuring In-The-Wild DRDoS Attacks at IXPs." In International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment, 2021.

SMARTCOMP '21   Subramani, Karthika, Omid Setayeshfar, Xingzi Yuan, Raunak Dey, Dezhi Hong, Kyu Hyung Lee, and In Kee Kim. "ChatterHub: Privacy Invasion via Smart Home Hub." In 2021 IEEE International Conference on Smart Computing (SMARTCOMP), IEEE, 2021.

IMC '20   Subramani, Karthika, Xingzi Yuan, Omid Setayeshfar, Phani Vadrevu, Kyu Hyung Lee, and Roberto Perdisci. "When push comes to ads: Measuring the rise of (malicious) push advertising." In Proceedings of the ACM Internet Measurement Conference, 2020.

Teaching Experience

Spring 2017	**Instructor** │*University of Georgia*

- Taught Discrete Math course to a class of 60 students
- Prepared course materials such as syllabi, homework assignments and handouts

2015-08 – 2016-12 **Teaching Assistant** │*University of Georgia*

- Handled multiple lab classes assisting students with lab programs and assessing their projects

2012-07 – 2015-06 **Trainer │** │*Infosys Ltd, Mysore, India*

- Developed fully established applications for Education & Research Department and maintained web servers and web applications
- Mentored interns on projects related to web and mobile app development
- Trained new recruits in Java, Oracle, Web and Microsoft .NET technologies
- Developed coursework for Web technologies and e-learning portal

Invited Talks

Nov 2022 **PhishInPatterns: Measuring Elicited User Interactions at Scale on Phishing Websites**
Palo Alto Networks, Security Seminar

Oct 2022 **PhishInPatterns: Measuring Elicited User Interactions at Scale on Phishing Websites**
University of Georgia, Guest Lecture

Nov 2020 **When Push comes to Ads: Measuring the Rise of (Malicious) Push Advertising**
Georgia Institute of Technology, Guest Lecture

Poster Sessions

Jul 2022 **Workerounds - Categorizing Service Worker Attacks and Mitigations**
2022 CAE in Cybersecurity Symposium

Dec 2019 **IXmon: detecting and analyzing DRDoS attacks at internet exchange points**
ACSAC 2019, Poster Session

Oct 2019 **SmartRecon: Spy on Smart-Home Devices Hidden Behind the Hub**
Research Day @ University of Georgia (Won 3rd Prize)

Apr 2018 **A Detailed Study of Phishing Sites via Site Deconstruction & Clustering Techniques**
Research Day @ University of Georgia

Services

2022 Peer Reviewer for Transactions on Privacy and Security (TOPS)

2022 Member of Women in Cyber Security (WiCys)

2021 External Reviewer for Euro Security and Privacy (EUROSP)

2018 - 2020 Executive Member of Computer Science Graduate Student Association at UGA

2016 - 2017 Public Relations Officer of Indian Student Association at UGA

References

Roberto Perdisci
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Institute for Cybersecurity and Privacy,
University of Georgia
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Oleksii Starov
Research Manager,
Palo Alto Networks
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Alexandros Kapravelos
Associate Professor,
North Carolina State University
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