

Afsah Anwar

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PROFESSIONAL EXPERIENCE

08/2021 – Current	Postdoctoral Researcher	Northeastern University	Threat Measurement
08/2017 – 07/2021	Research Assistant	University of Central Florida	Software systems security
05/2019 – 07/2019	Visiting Research Assistant	USC ISI	Vulnerability detection
01/2015 – 06/2017	Data Analyst (C)	Apple	Apple Music Analytics

RESEARCH INTERESTS

- Malware Analysis
- Vulnerability Management
- Threat Intelligence
- Robust Machine Learning Applications in Security and Privacy

EDUCATION

PH.D. & M.S., Computer Science, University of Central Florida, Orlando, FL, USA (2017 – 2021)

Advisor: Prof. David Mohaisen

Topic: Understanding the Security of Emerging Systems: Analysis, Vulnerability Management, and Case Studies

B.S., Electronics & Communication Engineering, Jamia Millia Islamia University, New Delhi, India (2010 – 2014)

TECHNICAL PUBLICATIONS AND MANUSCRIPTS

1. Ahmed Abusnaina*, Afsah Anwar*[§], Abdulrahman Alabduljabbar, Sultan Alshamrani, RhongHo Jang, DaeHun Nyang, and David Mohaisen. **“Systematically Evaluating the Robustness of ML-based IoT Malware Detection Systems”**, *25th International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2022)*
2. Afsah Anwar[§], Ahmed Abusnaina, Songqing Chen, Frank Li, and David Mohaisen. **“Cleaning the NVD: Comprehensive Quality Assessment, Improvements, and Analyses”**, *IEEE Transactions on Dependable and Secure Computing (TDSC 2021)*
3. Afsah Anwar[§], Hisham Alasmay, Jeman Park, An Wang, Songqing Chen, and David Mohaisen. **“Statically Dissecting Internet of Things Malware: Analysis, Characterization, and Detection”**, *The 22nd International Conference on Information and Communications Security (ICICS 2020)*
4. Afsah Anwar[§], Aminollah Khormali, and David Mohaisen. **“Understanding the Hidden Cost of Software Vulnerabilities: Measurements and Predictions”**, *The 14th EAI International Conference on Security and Privacy in Communication Networks, (SecureComm 2018)*
5. Afsah Anwar[§], Hisham Alasmay, Ahmed Abusnaina, Abdulrahman Alabduljabbar, Mohammed Abuhamad, An Wang, DaeHun Nyang, and David Mohaisen, **“SHELLCORE: Automating Malicious IoT Software Detection by Using Shell Commands Representation”**. *IEEE Internet of Things Journal*, 2021.
6. Muhammad Saad, Afsah Anwar[§], Ravi Srivatsan, and David Mohaisen. **“HashSplit: Exploiting Bitcoin Asynchrony to Violate Common Prefix and Chain Quality”**, *ACM Conference on Computer and Communications Security, (CCS 2021)*
7. Afsah Anwar[§], Jinchun Choi, Hisham Alasmay, Jeffrey Spaulding, DaeHun Nyang, and David Mohaisen, **“Analyzing IoT Malware via Endpoints: A Data-Driven Approach”**. *IEEE Internet of Things Journal*, 2021.

8. Hisham Alasmay, Ahmed Abusnaina, Rhongho Jang, Mohammed Abuhamad, Afsah Anwar[§], DaeHun Nyang, and David Mohaisen, “**Soteria: Detecting Adversarial Examples in Control Flow Graph-based Malware Classifiers**”, *IEEE International Conference on Distributed Computing Systems (ICDCS 2020)*
9. Ahmed Abusnaina, Amin Khormali, Hisham Alasmay, Jeman Park, Afsah Anwar[§], and David Mohaisen. “**Adversarial Learning Attacks on Graph-based IoT Malware Detection Systems**”. *IEEE International Conference on Distributed Computing Systems (ICDCS 2019)*
10. Hisham Alasmay, Afsah Anwar[§], Jeman Park, Jinchun Choi, Daehun Nyang, and David Mohaisen, “**Graph-based Comparison of IoT and Android Malware**”, *The 7th International Conference on Computational Data and Social Networks (CSoNet 2018)*
11. Hisham Alasmay, Aminollah Khormali, Afsah Anwar[§], Jeman Park, Jinchun Choi, Ahmed Abusnaina, Amro Awad, DaeHun Nyang, and David Mohaisen, “**Analyzing and Detecting Emerging Internet of Things Malware: A Graph-based Approach**”, *IEEE Internet of Things Journal*, 2019
12. Jinchun Choi, Ahmed Abusnaina, Afsah Anwar[§], An Wang, Songqing Chen, Daehun Nyang and David Mohaisen, “**Honor Among Thieves: Towards Understanding the Dynamics and Interdependencies in IoT Bot-nets**”, *IEEE Conference on Dependable and Secure Computing (IDSC 2019)*
13. Jinchun Choi, Mohammed Abuhamad, Ahmed Abusnaina, Afsah Anwar[§], Sultan Alshamrani, Jeman Park, Daehun Nyang, and David Mohaisen, “**Understanding the Proxy Ecosystem: A Comparative Analysis of Residential and Open Proxies on the Internet**”, *IEEE Access*, 2020

Please find my complete list of publication on my [Google Scholar](#).

PUBLIC PRESENTATIONS

1. Paper presentation of *Statically Dissecting Internet of Things Malware: Analysis, Characterization, and Detection* at The 22nd International Conference on Information and Communications Security, ICICS 2020.
2. Paper presentation of *Understanding the Hidden Cost of Software Vulnerabilities: Measurements and Predictions* at 14th EAI International Conference on Security and Privacy in Communication Networks, SecureComm 2018.
3. Poster presentations at AsiaCCS 2018, USENIX Security 2019, and NDSS 2019.

SKILLS

- Python, Java, Teradata, Hive, BigQuery, AWS Athena, Hortonworks, Big Data Analytics
- Reverse-engineering, Malware Analysis, Vulnerability Management, Open-Source Intelligence, Forensics

SERVICES

- External reviewer for NDSS 2018, INFOCOM (2018-2021), TDSC (2018, 2021), TMC (2018, 2019), PETS 2019, Computer Networks (2021, 2022), IoT Journal 2021
- Tutor: STEM Day (October, 2018) and STEM Summer Camp (June, 2018)
- Helped organize CoNEXT 2019
- Virtual Conference Task Force 2020

REFERENCES

David Mohaisen, Professor
Department of Computer Science
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Frank Li, Assistant Professor
School of Cybersecurity and Privacy
Georgia Institute of Technology
E-mail: frankli@gatech.edu

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