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<https://mundruid.github.io/>

PROFESSIONAL STRENGTHS

- Network Security
- Machine Learning
- Performance Engineering
- Security Metrics
- Probability and Statistics
- Leadership

PROFESSIONAL EXPERIENCE:

May 2020 – present

Network Automation Engineer

Network to Code

- Developed Ansible Collections and SDK for SD-WAN
- Created CI/CID workflows
- Developed KPI telemetry for automation utilization
- Participated in open source PyNTC and Nautobot Plugin projects

Aug. 2016 – May 2020

Assistant Professor

College of Charleston

- Director of the Cybersecurity X Lab. Security projects:
 - *Internet of Things (IoT) security evaluation:*
 - IoT usage is growing exponentially and the attack surface has increased with poorly secured Internet connected devices.
 - The goal is to evaluate the security of common IoT home devices.
 - Setup IoT testbed, automated tests with scripting languages for correct operation and network attacks.
 - Generated original IoT packet captures and system log datasets, created behavioral model for IoT intrusion detection, and developed testcases and quantitative metrics to evaluate IoT security.
 - *Adversarial data analytics:*
 - Adversarial behavior is unpredictable and yet important for the evaluation of systems security.
 - The goal is to develop a data driven forecasting model of attacker behavior.
 - Automated analysis of a large dataset (5 TB) with Snort and Bro (Zeek).
 - Developed a forecasting Markov model for adversaries.
 - *Software Defined Networking (SDN):*
 - Denial of Service attacks are indistinguishable from flash flood user traffic.
 - The goal is to use IDSs such as Snort in combination with SDN controller information to verify an attack and block it.
 - Programmed SDN controller to correlate DDoS Data and block appropriate ports for prevention in real time.
 - Increased accuracy of DDoS attack detection up to 50% with low performance overhead.
 - *Machine learning for intrusion detection:*
 - Intrusion detection is a multifaceted, hard problem to solve accurately.
 - The goal is to reduce false positives and increase accuracy of attack detection.
 - Applied clustering algorithms such as spectral clustering and decision trees, to differentiate attack from regular network traffic.

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4. Blaine Billings, Xenia Mountrouidou, “*Modelling Correct Operation of Webcams for Security Purposes*”, ACM Undergraduate Research Competition Extended Abstract (SIGCSE 2018), (*Awarded First Place* in competition)
5. Josephine Chow, Xiangyang Li, Xenia Mountrouidou, Raising Flags: Detecting covert storage channels using relative entropy, IEEE International Conference on Intelligence and Security Informatics (IEEE ISI 2017), July, 2017, Beijing, China.
6. Tommy Chin, Xenia Mountrouidou, Xiangyang Li, and Kaiqi Xiong, “*An SDN-Supported Collaborative Approach for DDoS Flooding Detection and Containment*”, IEEE Military Communications Conference (MILCOM), October 26-28, 2015, Tampa, Florida, USA