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I'm an infosec enthusiast with a strong background in network security (IDS/IPS), anti-malware technologies (EDR/XDR), research methodologies and innovation.

Experience

Principal Engineer at Qualys Inc.

Jan/2019 - Present

- Product research, design and PoC: Breach Simulation, Security Control Validation, Attack Surface Mapping, Asset Remediation Trendmap
- Research and automation: Threat Intelligence feeds evaluation and aggregation, False Positive validation, event whitelisting, risk scoring, rule parsers and converters
- MITRE ATT&CK TTP correlation (adversary killchain), quantification and scoring
- Subject Matter Expert for research/innovation and multiple automation workflows

Sr. Malware Research Engineer at Qualys Inc.

Jan/2017 - Jan/2019

- Research towards automated aggregation of threat behavior, filed for US patent and implemented as part of a customer facing product
- Worked with various teams as a Subject Matter Expert for AntiMalware and network security research initiatives
- Worked on multiple research ideas that could be leveraged as Intellectual Property
- First responder to provide detection against active malware campaigns

Malware Research Engineer at Qualys Inc.

Apr/2015 - Jan/2017

- Research automated (Yara/IoC) rule creation for generic threat coverage
- Automated sourcing, filtering and scanning of malware samples
- Reverse engineering and analysis of malware samples
- Worked on various in-house automation and development projects
- Technologies: Python, Shell, Unix, Windows, AntiMalware, EDR

Security Research Engineer at Juniper Networks

Apr/2012 - Feb/2015

- Testing and updating in-house automation tools that help with coverage analysis against various exploitation frameworks
- Ensured coverage against latest vulnerabilities and exploits through signature development for Juniper's security portfolio devices
- Regular updates of active signatures to ensure coverage against evolving IDS/IPS evasion techniques as well as for quality assurance
- Technologies: Python, Shell, Unix, Windows, IDS, IPS

Information Security Engineer at SecurView Systems

Dec/2010 - Apr/2012

- Vulnerability Researcher / Security Analyst for the Cisco Security IntelliShield Alert Manager Service
- Active member of the Secur-I Research Group with monthly publication of critical vulnerability assessments and concentrated vulnerability research
- Technologies: Python, Shell, Unix, Windows

Patents

Attack Path and Graph Creation Based on User and System Profiling	Jul/2019
Attack Kill Chain Generation and Utilization for Threat Analysis	Apr/2019
Asset Remediation Trend Map Generation and Utilization for Threat Mitigation	Apr/2019
DSL for Simulating a Threat-Actor and Adversarial TTPs	Apr/2019
DSL for Defending Against a Threat-Actor and Adversarial TTPs	Apr/2019
DSL for Threat-Actor Deception	Apr/2019
Method and Apparatus for Intelligent Aggregation of Threat Behavior	Apr/2017
Using A Probability-based Model To Detect Random Content In Network Traffic	Dec/2014
Deobfuscating Scripted Language For Network Intrusion Detection	Sep/2014

Talks

svachal + machinescli

These tools are useful for creating and learning from CTF writeups

[DEF CON 30 Demo Labs](#) 13/Aug/2022

Angad - Malware Detection using Multi-Dimensional Visualization

Angad is a tool that can perform visual malware clustering using Hilbert Curves

[SecTor 2018](#) 13/Oct/2018

[BSides Zurich 2018](#) 14/Sep/2018

[GrrCON 2018](#) 07/Sep/2018

[DEF CON 26 Demo Labs](#) 11/Aug/2018

Visual Network and File Forensics

This presentation showcases the effectiveness of visual tooling for malware and file-format forensics

[DEF CON 25 Packet Hacking Village](#) 29/Jul/2017

[Virus Bulletin 2017](#) (could not attend)

Rudra - The Destroyer of Evil

Rudra provides a framework for exhaustive analysis of PCAP and PE files

[DEF CON 24 Demo Labs](#) 06/Aug/2016

[Black Hat USA 2016 Arsenal](#) 03/Aug/2016

[OWASP Pune Meet](#) 28/Jul/2016

[Black Hat Asia 2016 Arsenal](#) 31/Mar/2016

[Black Hat EU 2015 Arsenal](#) 13/Nov/2015

[DEF CON 23 Demo Labs](#) 08/Aug/2015

[Black Hat USA 2015 Arsenal](#) 05/Aug/2015

Flowinspect - Network Inspection Tool on Steroids

Flowinspect is a tool for network monitoring and inspection purposes

[Black Hat USA 2014 Arsenal](#) 06/Aug/2014

[Nullcon 2014](#) 14/Feb/2014

Media

Bossie Awards 2017 - The best networking and security software, [InfoWorld](#) Sep/2017

Visual network and file forensics with Rudra, [HelpNet Security](#) Sep/2017

Rudra - Framework for inspection of network capture files, [HelpNet Security](#) Sep/2015

Network Sorcery with ChopShop and Libemu, [PenTest Magazine](#) Mar/2014

Academics

M.Tech Software Systems, [BITS-Pilani](#)

Dec/2014

Thesis: [Rudra - Framework for Automated Inspection of Network Flows](#)

BE Information Technology, [Pune University](#)

Jul/2010

Thesis: [Insider Threats - Research on ARP Security Flaws and Solutions](#)

Certifications

[Amateur Radio Operator \(KN6VLB\)](#)

Aug/2022

[GIAC Penetration Tester \(GPEN\)](#)

Mar/2012

[Cisco Certified Network Security Associate \(CCNA\)](#)

Jan/2010

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