

# Ankur Tyagi

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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

- Quantification of Adversary TTPs Using Threat Attribute Groupings and Correlation Dec/2021
- Security Event Detection Using Behavioral, Analytical and Threat Intelligence Attributes Dec/2021
- [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 \(KN6VLB\)](#)
- [GIAC Penetration Tester \(GPEN\)](#)
- [Cisco Certified Network Security Associate \(CCNA\)](#)

Aug/2022

Mar/2012

Jan/2010

Last updated: 20/Sep/2022