

Vaibhav Hemant Dixit

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EDUCATION

Master of Science, Computer Science, Arizona State University, Tempe, AZ **May 2018, GPA 3.67**
Courses – Research thesis in SDN security, Software Security, Binary Analysis, Foundations of Algorithms, Embedded OS

Bachelor of Technology, Information Technology, Vellore Institute of Technology, India **May 2013, GPA 3.6**

SKILLS

Languages: *Proficient* - Python, Java, C; *Familiar* - GO, Bash **Tools:** Gdb, Wireshark, IDA, Scapy, Docker, ROBOT.

Others: OpenFlow, OpenStack, TCP/IP, Ansible, AWS, Git, Microservices, Jenkins, Linux, K8S, CICD, Groovy, Pentesting

PROFESSIONAL EXPERIENCE

Software Engineer 2, Comcast Corporation, Philadelphia **Jul 2018 to present**

- Designing and developing a **Python3**-based certification framework for network devices. Incorporated moderate understanding of networking protocols (**ISIS/BGP/LDP**/etc.) and advanced features such as Segment Routing.
- Other projects and POCs: building security-orchestration layer in **GO**, prototyping nextGEN firewall for SDNs in **Python**, evaluating secured-design of applications to be deployed in Comcast internal network.

Software Engineer, Samsung Electronics, India **Jul 2013 to Jun 2016**

- **Built advanced Linux kernel features** for WLAN 802.11w, secret SSID and multiband support.
- Implemented **kernel space C** libraries for features like WPA, WPA2, P2P, etc. Quickly identified critical kernel defects like memory leaks and race conditions.
- Worked **beyond assigned duties to automate the process** of build, sanity and stress testing: **reduced overall bug fixing time** and made a direct impact in winning agile deadlines by a profit of 3-6 days per sprint.

RESEARCH EXPERIENCE

Research Assistant (fully funded by NSF), Center for Cybersecurity and Digital Forensics, ASU **Dec 2016 to Aug 2018**

- Credited by Linux Networking Foundation for reporting and helping to fix vulnerabilities in SDN controllers: [CVE-2017-1000406](#) (Web cache), [CVE-2017-1000411](#) (DoS), [CVE-2018-1078](#) (Advance Persistent Threat)
- **PUBLICATIONS** († First author) (‡ Co-author)
 - † [AIM-SDN: Attacking Information Mismanagement in SDN-datastores at ACM CCS 2018, Toronto, Canada](#)
 - † [Challenges and Preparedness of SDN-based Firewalls at ACM SDN/FV Workshop 2018, Tempe, Arizona.](#)
 - ‡ [Science DMZ: Software Defined Networking based Secured Cloud Testbed at IEEE NFV-SDN 2017, Berlin.](#)
 - ‡ [HONEYPROXY: Design and Implementation of Next-Generation Honeynet via SDN at IEEE CNS 2017, Vegas.](#)

ACADEMIC PROJECTS

- **Advanced software firewall for SDN:**
Single handedly designed a centralized **Java** application for policy conflict detection and dynamic resolution which pulled topology information using OpenFlow APIs and generated a **complex logical graph of flow rules**.
- **Framework for exploit detection and patching in Capture the Flag competition:**
Participated in a project based **CTF** game. Contributed to defense framework using **Python**, **Scapy** and Pentesting tools.
- **Embedded programming in Intel Quark based Galileo board:**
Project aimed to provide an understanding of internals of Linux and RTOS kernel architecture by implementing device drivers for ultrasonic sensor and GPIO pins. Programmed **ioctl**s, **syscall**, **static**, **dynamic probes**, **MISC drivers**, etc.
- Competed with ASU's blue team in Collegiate Cyber Defense Competition, 3rd in best-defense category.