

# ARPIT JOSHI

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## EDUCATION

### Masters of Electrical Engineering (Networking major)

San Jose State University, San Jose, CA

Aug'18 -- Present

(graduating in May'20)

### Bachelor of Electrical Engineering

Gujarat Technological University, Gujarat, India

March'13 -- March'17

**Relevant courses:** Internetworking, Linear-Systems Theory, Machine learning, Voice over IP, Broadband Communication, Network Security, Microcontroller & Processors.

## TECHNICAL SKILLS

**Tools:** Wireshark, MATLAB, Virtual-Box, WinSCP, puTTY, Bit-bucket, GitHub, JIRA

**Networking Aspects:** ARP, VLAN, TCP/IP, DHCP, DNS, MPLS, IPv4, IPv6, IP sub-netting, HTTP, OSI Model, 802.11, BGP, FTP, VPN, TCP, UDP, ICMP, IGMP, Spanning Tree Protocol(STP), Switching, RIP, EIGRP, OSPF, SIP, VoIP protocols, Mininet, Openflow, MPLS

**Scripting/Programming:** Python, MATLAB, C++, Java

**Environments:** Windows, Mac, Linux (Ubuntu, Kali, Mint, Backtrack5)

## PROFESSIONAL EXPERIENCE

### Intern, Ruckus Wireless / Commscope / Arris International, Sunnyvale, CA

May'19-Aug'19

- Worked with Ruckus Small Cell Software Development team as software engineer intern and developed a Python script for fetching data periodically from the Ruckus Q710 and Ruckus Q900 Wi-Fi 6 series Access points deployed indoor and outdoor environments.
- Automated simultaneous generation of statistics for multiple record Id's running on an instance of an Access point, thus the automatic generation of multiple CSV files for numerous record Id's. Analyzed statistics which contained PDU's, SDU's and other fields for the goal of improvising and predicting throughput of access points.

### Graduate Engineer Trainee, Beacon Pvt Ltd, Gujarat, India

March'17-Aug'18

- Active participant in the troubleshooting, Handling queries with technical issues on PLC units which involved test trials and bug tracking systems to create workaround.
- To analyze defect and create database of known defects in order to develop protocol for repeated problems.
- Managed Return Merchandise Authorization (RMA) process for clients.

### Intern, Reliance Industries Ltd., India

April'16-July'16

- Worked as an intern at captive power generating company to gain relevant information and professional experience.

## ACADEMIC PROJECTS

### Masters Final Year Project – Wireless Mayhem Using Python:

Aug'19-Present

- Using Hawking network adapter on Linux Backtrack 5, trying to breach into wireless network and its protocols such as HTTP GET-REQUEST, FTP, session cookies and similar frames to understand the vulnerabilities of the wireless connections. Using Scapy and NFQUEUE, extracting useful information from the payload of captured packets/frames from the wireless network.

### Hands on Open-vSwitch – Hypervisor

Jan'19-March'19

- Configuring connection between host and multiple virtual machines using open Vswitch on Linux Ubuntu and Hyper-V and making communication between all VMs from host using VLANs on LINUX to gain understanding of hypervisors.

### TCP/IP attack lab – Attacks on TCP/IP

Jan'19-March'19

- Three virtual machines running on different Linux environments as Attacker, Victim and Observer are set up to perform TCP SYN flood attack, IP spoofing attack, TCP reset attack and TCP session hijacking attack to understand network security and its vulnerabilities. Reverse shell was performed from Victim.

### Machine Learning implementation on Gas Sensor Array Drift Dataset

Jan'19-March'19

- Multiple machine learning model was developed and trained for dataset made from 16 gas sensors to overcome over-time degradation of performance (i.e., sensor drift). Visualized the effect of sensor drift on the dataset using Principal Component Analysis because of 128 features for the dataset. Comparison of multiple machine learning models and its accuracies were made for the understanding.

### Bypassing Firewall using VPN

Jan'19-March'19

- Two machines running on Linux environment used to bypass firewall enabled on one machine and to access the non-granted IP. Tunnel was made using Linux CLI to understand the working of VPN and Firewall.

### Making android device rooting system

Aug'18-Nov'18

- Developed a complete rooting package from scratch, and used the developed package to root the virtual Android machine.

### High efficiency CSMA/CA (Literature review)

Aug'18-Nov'18

- Wrote a paper for internetworking on possible ways to improve efficiency of CSMA/CA by numerous methods such as by changing the adaptively scaled back-off time (ASB) mechanism.