Mokshith Kumar Tumallapalli

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EDUCATION

University of Southern California | Masters in *Electrical Engineering (Computer Networks)* ***GPA: 3.50*** **Gradation Date: May 2019**
Bangalore Institute of Technology | B.E. in *Electronics and Communication Engineering* ***Aggregate: 80%*** **Gradation Date: June 2017**

TECHNICAL SKILLS

- **Applications:** Wireshark, Amazon Web Services (AWS), Opnet-Riverbed Modeler, GNS3, Cisco Packet Tracer
- **Protocols & Technologies:** TCP/IP, UDP, DNS, DHCP, VPN, VLAN, VTP, 802.1Q, NAT, ACL, SNMP, OSPF, RIP, EIGRP, BGP, GRE
- **Programming Languages:** C/C++, Python
- **Cloud Technologies:** EC2, S3, IAM, VPC, ELB, Route53, ElastiCache, SNS, SQS, Cloud Watch, Cloud Front
- **Courses:** Computer Networks, Internet and Cloud Computing, Broadband Network Architectures, Operating Systems, Security Systems
- **Operating Systems:** Windows, MacOS, Linux, Cisco IOS, Junos

CERTIFICATIONS

- AWS Certified Advanced Networking Specialty
- AWS Certified Solutions Architect Associate
- AWS Direct Connect Subject Matter Expert
- Cisco Certified Network Professional - Routing and Switching (Ongoing)
- Cisco Certified Network Associate (CCNA - Routing and Switching)
- Juniper Networks Certified Internet Associate (JNCIA - Junos)
- IPv6 Forum Certified Network Engineer (Silver)

EXPERIENCE

Cloud Support Engineer, Amazon Web Services (AWS), Herndon, VA, US **June 2019 – Present**

- Provided extensive technical support and guidance to a wide range of external customers as they build mission-critical applications on top of AWS.
- Served as a key contributor in supporting AWS services that focus on Networking technologies including DX, VPN, VPC, ELB, R53 etc.
- Supported AWS customers with System Administration tasks on Linux (Ubuntu, CentOS, RedHat, Amazon Linux etc.) and troubleshooting networking issues in TCP/IP, DNS, SSH, Routing, firewalls, LAN/WAN etc.
- Designed and developed web applications hosted on EC2 based on the three-tier architecture that leverages Elastic Load Balancing (ELB) and Auto Scaling to build a highly available and fault-tolerant infrastructure along with managing full application stacks from the OS up through custom applications.
- Responsible for solving customer's cases through a variety of customer contact channels which include telephone, email, and web/live chat specializing in Networking services of AWS.
- Applied advanced troubleshooting techniques to provide tailored solutions for AWS customers and drive customer interactions by thoughtfully working with customers to dive deep into the root cause of an issue.
- Achieved the Subject Matter Expertise (SME) title in AWS Direct Connect service, there becoming the point of contact for critical customer issues with Direct Connect service.
- Coached and mentored new hires, developed & presented trainings, wrote tutorials, public facing articles, and other technical articles for the developer community.
- Partnered and collaborated with development teams on complex issues or contact deflection initiatives, participated in new hiring, wrote tools and scripts to help the team and worked with leadership on process improvement and strategic initiatives.

Research at Centre for Cyber-Physical Systems and Internet of Things, University of Southern California **Jan 2018 - May 2018**

- Captured/modeled traffic on a stretch of road using YOLO + GPU pipeline and detected number of vehicles passing through a given region
- Captured and archived real-time video and fed it to an application to detect vehicles using Darknet – an open source neural network framework

Robert Bosch Engineering and Business Solutions, India **Jan 2017 - April 2017**

- Interned as Module and System Tester in Driver Assistance Systems for high-end cars and improved response time of various systems such as Adaptive Cruise Control and Predictive Pedestrian Protection
- Performed ECU Testing/Simulation and verified test cases of various services using vTestStudio
- Presented topics such as CAN, Ethernet and FlexRay protocols during knowledge sharing sessions

ACADEMIC PROJECTS

Weenix-Unix Kernel Based Operating System **May 2018**

- Developed fundamentals for UNIX based OS called WEENIX in C
- Programmed System Calls for process creation, thread creation, mutex implementation, scheduling mechanism, context switching, and synchronization primitives
- Implemented an interface between WEENIX Kernel and underlying file system (ramfs or S5FS)
- Implemented virtual memory management for WEENIX OS, functions for page fault handler, thread cloning, forking a process

OpenFlow Switch and Router Design **Mar 2018**

- Designed a switch and a router using OpenFlow and tested it for various topologies and created a firewall to modify switch's behavior
- Used Mininet to simulate a realistic virtual network on a single machine and POX Controller in Python for implementing the switch

Token Bucket Emulation using Multi-Threading **Feb 2018**

- Designed a traffic shaper controlled by a token bucket to transmit TCP/IP packets and programmed a time-driven emulation of Token Bucket Algorithm
- Regulated functionality of a user interrupt to abort emulation in a graceful manner and provided statistics
- Implemented a token generator, token bucket, and servers and handled race conditions using mutex (Pthread library)

UNIX Socket Programming **Nov 2017**

- Programmed a prototype of AWS MapReduce program to perform computational offloading where a single client offloads computation to a server to in turn distribute load to back-end servers
- Programmed a client server model to govern communication of UNIX sockets for both TCP and UDP connections

A Cloud Based Android Application for Recipe Suggestion **Oct 2017**

- Used Amazon Web Services and built an application to suggest users suitable recipes based on input images
- Analyzed and classified input images using AWS recognition to suggest a suitable recipe

Wireshark and Riverbed Modeler **Sept 2017**

- Worked on Riverbed Modeler to analyze effect of packet size, network load and collision detection on throughput of Ethernet
- Analyzed exchange of data packets in networking protocols like DHCP, DNS, ARP, Ethernet, HTTP and IEEE 802.11
- Performed extensive evaluation on performance of Router Information Protocol (RIP) and analyzed effect of link failures on network
- Configured and verified performance of Open Shortest Path First (OSPF) routing protocol and observed effect of load balancing

CO-CURRICULARS

- Awarded AWS Support Engineer of the Quarter for the third quarter of 2020
- Elected as Technical Coordinator of Electronics & Communication Students' Association, an official tech club of BIT-ECE
- Organized 3 workshops on IoT, Raspberry Pi and Arduino with over 250 participants
- Awarded first prize among 50 teams in RC Car Challenge at National Level Techno Fest organized by NITTE