PRUDHVIRAJ TIRUMANISETTI

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PROFESSIONAL SUMMARY:

- Experienced ***Software Engineer*** with ***Master*** of electrical engineering and a demonstrated history of working in IT industry.
- Skilled in ***python***, cloud operations(AWS, Azure), TCP/IP stack, network ***security***, IoT domain and ***Software Defined Networking***.
- Solid understanding on networking protocols and **Industrial IoT protocols** such as BACnet, OPC, MQTT, AMQP, DDS
- Knowledge and experience of complex software design for **distributed systems** in embedded networking projects.
- Experienced in configuring various industrial devices(**Siemens S7-300 PLC**, Allen Bradley PLC, **BACnet** Servers) and pushing the **normalised data** to the remote cloud by design and developing Microservices.
- Experienced in agile framework and ***Scrum*** Methodology.

PROFESSIONAL EXPERIENCE:

SOFTWARE ENGINEER - II, ioTium Inc, Santa Clara, CA, USA. **October 2018 – Present**

- Design, develop and implement microservices architecture for **containerized** data processing and Network Monitoring on Linux VMs and edge devices with **Kubernetes** for orchestration, VMWare and **ELK** stack for device management in process control secure environment.
- Design develop and implemented **Simulators** for data generation and also data transfer tools to push the simulated data to the remote destinations such as **Azure IoT-Hub,** AWS GreenGrass, Google IoT using **MQTT/AMQP/HTTPS** protocols.
- Build software automation workflows for infrastructure monitoring and alerting by leveraging Python automation framework.
- **Initiated proposal** for using Industrial IoT as a platform service to provide predictive maintenance, OEE and optimizing spare parts efficiency in the equipment division by conducting customer site surveys and interviews.
- Work hand-in-hand with marketing, **customer success and Engineering** to understand the end user/customer requirements and translate them into **solutions**.
- Responsible for developing ioTium Edge services using Golang, **Python** and **Ansible** playbooks for deployment **automation**.
- Worked on Various Industrial IoT devices and Protocols such as **BACnet, Modbus, OPC,** RockWell PLC, Siemens S7-300 PLC,
- **Tech Stack:** Python, GoLang**,** Bash/Shell, C, **Kafka**, InfluxDB, Docker, Kubernetes, AWS, Azure, GCP, BitBucket, Telit, ELK

SOFTWARE DEVELOPER (intern), OCTONIUS Inc, Palo Alto, CA, USA **May 2017 – October 2017**

- Responsible for Creating ***voice integration*** and VOIP Search Functionality.
- Experienced in integrating file transfer-based ***Search Engine*** along with Voice based search using Web-kit-speech Recognition API.
- Worked on ***Machine Learning algorithm*** to predict the user-based ***recommendation*** based on the pattern analysis.
- Responsible for designing a test framework to validate the code changes before deploying on production servers.
- Worked on ***monitoring*** the software patch, testing, bug analyzing and providing a fix collaborating with other developers.
- Write REST APIs, helper functions and test automation scripts for the internal ***test automation*** framework using JIRA and Python
- Engage with customers and ***support*** to solve production issues.
- **Tech Stack**: Python, Node.JS, MongoDB, PostgreSQL, CloudFormation, Rest API, Jenkins, Bitbucket, AWS, ***Docker***.

IT Support (Student Assistant), San Jose State University, San Jose, CA, USA **February 2017 – May 2018**

- Maintained Cisco routers and switches, configured **L2, L3 protocols** on routers.
- Troubleshooted the routers (routing protocols) and switches (**VLans**, STP), helped Students to resolve technical issues.
- Assist in modelling the site blueprints by taking into consideration the RF parameters and thus deploy the access points.
- Experienced ***troubleshooting*** network problems for LAN and Wireless communications and security issues.

SKILLS:

Programming Languages: Python (*Advanced*), C, C++, PHP, Unix Shell/Bash Scripting, Go(Intermediate)
Protocols: TCP/IP suite, UDP, RIP, OSPF, EIGRP, BGP, NAT, MPLS, VLAN, IPv4/v6, DHCP, DNS, STP, VTP, SNMP, ARP, HSRP, HTTP(S), SSL, AAA
Networking Tools: Wireshark, Putty, NS2, GNS3, Scapy, VMware ESXi, V-center server, HyperTerminal, Cisco Packet Tracer
Data Science Tools: Pandas, Numpy, Tableau, Scikit-Learn (sklearn), Scipy, TensorFlow, Matplotlib
Database: MySQL, MongoDB, DynamoDB, InfluxDB | **Frameworks:** Django, Flask | **Big Data Ecosystem**: Kafka, Spark
Knowledge: Network Programming, Firewalls, Network Security, Cryptography, Deep Learning, ***Data Structures and algorithms***, ***OOPS***, Client & Server Architecture, ***SDN & NFV***, Deep Learning, Microservices, Kernel Architecture, AES & DES Encryption, Multi-threading.
Cloud Platforms: AWS-EC2, S3, EBS, VPC, RDS, Azure, IoT-Hub, ***Kubernetes*** | **CI/CD:** Ansible, Chef, Jenkins, Splunk, Nagios
Certification: Cisco Certified Network Associate (CCNA CSCO13315295), Certified Kubernetes Administrator (CKA), AWS Certified Developer

EDUCATION:

Master of Science (*Electrical Engineering with Computer Networks and Deep Learning***)** **May 2018**
San Jose State University, San Jose, CA, U.S.A
Bachelor of Technology (*Electronics and Computer Engineering***)** **May 2016**
VR Siddhartha Engineering College.

ACADEMIC EXPERIENCE:

Slack Bot for coursework info **-** *Slack API,* ***Python****, DynamoDB, Quepy, AWS Lambda, NLTK*

- Built a question-answer chat bot against data stored in AWS ***DynamoDB*** and a Slack API.
- Defined ***regular expressions*** to match income natural language questions (*Lemmas*) using ***NLTK*** tagger.
- Configures AWS API gateways and deployed the ***business logic*** on ***AWS Lambda*** using Python-Lambda libraries.

Predict Survival on the Titanic **–** *Machine Learning, Python, Jupyter Notebook, Sklearn*

- Feature Engineering and data cleaning to handle non-numeric, missing and categorical values.
- Used ***Support Vector Classifier*** to train model and predict survival with an accuracy of 76%.

Develop a Load Balancing Algorithm for SDN using POX controller **-** ***Python****, SDN, FloodLight Controller, Mininet, Floodlight*

- Lead a team in developing and implementing a load balancing algorithm using ***FloodLight*** controller.
- Was involved in ***debugging*** and developing the load balancing code.
- Developed and Implemented Weighted ***Round Robin*** load balancing, Dijkstra algorithm and was developed using Python.

URLShorteningService **- Python,** Djngo, SQL, Heroku, Phishtank API, Docker, HTML, CSS

- Used Django to make web service calls. Dockerize the application to deploy in Heroku.
- Implemented Memcachier/Memcached to hold previous calls in memory thus increasing the performance when dealing with domain/urls already cached.
- Implemented Indexing for Speedy retrieval, and duplicate checks to make sure URL is stored only one time.

Stateful Firewall Software **-** ***Python****, Wireshark, Virtual Environment,* ***IPtables****, Scapy, Shell scripting*

- Basic Defence mechanism to drop malicious packets using the log file. Aim to deliver packet filtering, IP filtering, blocking Dos attacks and malicious website requests with minimum response time.