Subramanian Arunachalam

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Programming Languages	Python, C, C++
Web Technologies	HTML5, CSS3, Bootstrap, Flask
Databases	MySQL
Servers	Nginx, Apache
Github Projects link	https://github.com/SubramanianArun

Experience

Software Development Intern – Boston Scientific **May 2017 – Aug 2017**

4100 Hamline Avenue North St. Paul, MN 55112

- Automated a cross-team test request procedure using LabVIEW and Microsoft SQL server to test the batteries of a cardiac pacemaker in a clean room environment.
- Improved the efficiency of battery testing team by bringing down the test request time from 900 seconds to 180 seconds.

Graduate Research Assistant – Iowa State University **Jan 2016 – May 2018**

Coover Hall, 2520 Osborn Dr, Ames, IA 50011

- Developed a real world test bed framework that enables us to perform risk assessment, identifying vulnerabilities, implement IDS, DDoS protection systems, for PowerCyber Lab.
- Demonstrated the Ukraine power grid attack methodology and suggestions for defense in Cyber-physical systems Principal Investigators (CPS-PI) meet sponsored by Department of Homeland Security (DHS) in Florida, Feb 2017.
- Designed a website for PowerCyber lab to host security experiments using Python with Nginx server and noVNC clients to host the virtual machines with GitHub for source code control.
- Conduct periodic risk assessment, vulnerability assessment, VM architectures, configuring networks and routers, firewalls, analysis of TCP/IP logs with open source SIEM tools like Security Onion of Cyber-physical systems.

Engineer – QuEST Global Pvt Ltd **Nov 2013 – July 2015**

Embassy TechVillage, Marathahalli Outer Ring Road, Bellandur, Bengaluru

- Designed and developed a test automation software using LabVIEW for testing water pump rig inside the locomotive in General Electric – John F Welch Technology Centre, Bangalore.
- Maintained, cleaned up and improved efficiency of a large scale automation software with multiple time-critical loops containing data from hundreds of sensors for testing the locomotive engine in GE – JFWTC, Bangalore.

System Engineer – Captronic Systems Pvt Ltd **May 2011 – Nov 2013**

3, Victorian Meadows, Marathalli, Bangalore, Karnataka, India

- Created Automated Test Equipment (ATE) for testing automotive car clusters (media control) in a clean room environment for Visteon, a Ford subsidiary in Chennai, using LabVIEW and TestStand.
- Developed end-to-end software applications, integration and testing of embedded hardware like ECU in emission control systems in Robert Bosch, Coimbatore, India.

Academic Experience

CPRE 560X Data Driven Privacy and Security (Machine Learning) – Iowa State University

- Developed a python-based machine learning program for anomaly detection of IoT sensor data from 55 sensors trained using Intel dataset.
- Implemented five algorithms – Kmeans, SVM, DBSCAN, Mean-shift, Decision Trees and did a comparative analysis with metrics like accuracy, precision, confusion matrix and silhouette coefficients to compare the results of anomaly detection.

Hackathon/Hobby Projects – Iowa State University

- Developed a website ‘CyDelivery’ using Python and flask framework with network orchestration business model to let customers get groceries by peer individuals along with REST APIs to handle user requests.
- Developed a website to handle security events and incident management using python flask and MySQL server database to log all the incidents.

Education

Master of Science in Computer Engineering **Aug 2015 – Dec 2018**

- Iowa State University – Ames, IA CGPA**:** 3.46/4

Bachelor of Engineering in Electronics and Instrumentation **Aug 2007 – May 2011**

- Anna University – Chennai, India CGPA**:** 8.3/10