Ibraheem Saleh

MSCS Senior Software & Systems Engineer

Overview

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Status : US Citizen

Address

Klamath Falls, OR, 97603

Education

Highest Degree	Masters of Science in Computer Science California State Polytechnic University, Pomona	**December 2018** **GPA: 4.0**

Computer Languages & Software

C (Proficient), Java (Proficient), VB Scripting (Proficient), Python (Proficient), Robotframework (Proficient), SWIG (Proficient), C++ (Strong), Javascript (Strong), C# (Strong), Golang (Basic), git (Proficient), Docker (Proficient), PostgreSQL (Proficient),Jenkins (Proficient), MongoDB (Moderate), Bash/Tcsh (Proficient), TensorFlow/Keras (Strong), Cryptography (Proficient), JMS (Proficient), IIS (Proficient), Windows DNS (Proficient), WSUS (Proficient), Tomcat (Proficient), GPO/AD/LDAP (Proficient), Microsoft Office Suite (Proficient), Windows (Proficient), Unix/Linux (Proficient)

Experience

Jet Propulsion Laboratory — **Engineering Applications Software Engineer I, II, III**
Developer, Team Lead, Operations Support — **February 2015 - February 2023**

- Designed data access & cryptography interfaces for open source "CryptoLib" software which implemented the CCSDS Space Data Link Security standard to enable encrypted uplink communications for missions. Implemented MySQL-MariaDB data access integration using libMariaDB and proprietary Key Management & Cryptography integration using libcurl in C. https://github.com/nasa/CryptoLib
- Implemented Space Data Link Security (SDLS) service in Spring Boot for language agnostic RESTful bindings to lower level CryptoLib functionality. Created CFFI Python bindings to CryptoLib C libraries.
- Group programmed with NASA IV&V team to build core telecommand SDLS capabilities in CryptoLib.
- Solely maintained JPL core uplink software stack; implemented bug fixes, new feature development and operational missions support. Responsible for Command Translation Subsystem (CTS), Telecommand Utilities (TCU), Spacecraft Language Interpreter Collector II (SLINC II), and SLE Command Client (SCC).
- Designed and implemented a Robotframework based automated regression framework using a versatile “regenerate expect data” paradigm for expect data management for the AMMOS Mission Data Processing & Control System (AMPCS) software used in uplink and downlink telemetry processing.
- Created a JPL-Blackboard course for training new software test engineers to be able to develop automated tests and learn AMPCS software using a classroom-style, learn by doing exercises approach.
- Utilized syscall tracing (truss/strace) to diagnose low level failures and library incompatibilities of apps

MeridianLink — **Junior Systems Administrator**
Admin Scripter and Systems Manager — **February 2014 – February 2015**

- Wrote a vbscript using NSS Tools to distribute the company SSL certificate to the Firefox Trust Store
- Maintained Moodle/Confluence servers and wrote SQL queries to help content managers understand global resource usage statistics, user creation information and other valuable data
- Setup a Windows Server Update Services server and wrote a monthly database maintenance script
- Wrote a right-click context menu for ImageMagick for on-the-fly compression of images for the non-techie

Cal Poly Pomona — **Undergraduate & Graduate Student**
CS, IT & Machine Learning Enthusiast — **September 2009-March 2013, March 2017-December 2018**

- Published my Thesis, “Network Traffic Images: A Deep Learning Approach to the Challenge of Internet Traffic Classification” which experimentally proves that packet subflows, when rearranged in a 2D image-like structure and fed through CNNs, provide the best accuracy to date for QoS classification.
- Developed a cross-platform desktop Calendar application using golang with astilectron (html & javascript) and a node.js server with a mongodb NoSQL backend.
- Published “An Empirical Evaluation of Machine Learning Approaches for Species Identification Through Bioacoustics” which demonstrates that sound spectrograms can be used to accurately identify the origin species for provided sound bites.
- Implemented the Advanced Encryption Standard (AES) used by the U.S. Government according the Federal Information Processing Standards (FIPS) Publication 197