Siddharth Rajguru

Lubbock, TX.; Cell: 806-317-3712; Email: siddharth.rajguru@ttu.edu
Website: http://siddraj.com; Git repository: http://github.com/sidraj2002

Summary

A motivated generalist with experience in cloud infrastructure deployment, embedded hardware and medical devices

Education

M.S., Electrical Engineering, Texas Tech University, TX. (GPA: 3.5) Dec. 2015

B.S., Electrical Engineering (Math. Minor), Texas Tech University, TX. Dec. 2013

Experience

(References on request)

Blackberry Corp., Redwood City, CA.: Software Developer Student (Enterprise Cloud IoT applications) May 2015 – Aug. 2015

- Implemented and managed VM configuration scripts using Ansible configuration management tool
- Created Node Package Management (npm) solutions for private publishing and package hosting
- Created automation scripts for database replication and health checks
- Implemented scripts in Jenkins for continuous integration and automated publishing
- Created functional test cases and tested NodeJS applications and databases
- Used OpenNebula orchestration interface for VM performance analysis and creation
- Stress tested web applications using Jmeter for availability and robustness
- Received experience building cloud infrastructure and designing for scalability in an Agile Scrum environment

Carl Zeiss Meditec, CA.: System/Software Intern (Cirrus HD-OCT product line research and development) Jun. 2014 – Oct. 2014

- Debugged C# applications, performed integration and performance testing
- Stress tested medical device hardware using over-clocking and benchmarking tools
- Tested application for memory performance and bottlenecks due to fragmentation
- Performed a trade off study for application performance between SATA and PCIe based storage solutions
- Took the lead to provide a workflow for hardware based on core and chipset architectural roadmaps
- Performed tasks using TFS code control based on the Scrum methodology for software lifecycle

Computing Skills

OpenNebula	Ansible	Virtualization	NodeJS	JavaScript	Security	GRUNT	Shell Script	JSON
Docker	Firewall	HTML	ESXi	AWS EC2	REST	NGiNX	Couchdb	Jenkins
VS2010	Eclipse	Debugging	OpenCV	Intel Vtune	Testing	Cloud	Automation	CSS
Git / Gerrit	Mocha	JIRA	MATLAB	TCP/IP	Linux	Verilog	C/C++	ARM

Notable Projects 2011-2015

Academic/Self Started Projects

- Personal Web Application: Created and deployed a web application for hosting my portfolio
  - Created front-end using HTML, CSS and Bootstrap components
  - Created JavaScript handlers for dynamic page functionality
  - Used ExpressJS server for application deployment
  - Used NGiNX reverse proxy for additional security and scalability
  - Staged and tested the application on AWS EC2 running Ubuntu
  - Stress tested webserver with Jmeter for bottlenecks
- Web application optimization and security: Optimization for scalability and performance
  - Created configuration management script for parallel deployment
  - Used NGiNX for multi-instance management and caching
  - Improved performance and availability through multiple instances
  - Implemented timeouts and request rates to prevent DoS attacks
  - Used blacklisting scripts to filter high querying I.P. addresses
  - In-progress:Enhancements: Docker container deployment, NGiNX caching and load balancing
  - In-progress:Security: WAF, NGiNX access log parsing, basic authentication.
- Virtualization server and networking: Created a virtualization server using Esxi and vSphere for orchestration
  - Virtualization using Intel VT-d and VT-x compatible hardware for bare metal hypervisors
  - Provisioned virtual storage and computational parameters based on available hardware
  - Deployed server in a DMZ configuration for web application testing
  - Traffic monitoring and DHCP setup for a dual network EdgeOS Ubiquiti router

- Medical Imaging: Implemented MRI and Computed Tomography reconstruction techniques in Matlab
    - MRI: Image significance mapping for multi-coil image reconstruction
    - MRI: Created a Matlab algorithm for FOV based image cropping and significance map generation
    - CT: Usage of radon and inverse radon transform algorithms for projection based reconstruction
    - CT: Fourier domain filters for noise reduction and blur reduction
- Image processing service: Created a web service using WCF with a forms app for frontend usage
    - Implemented OpenCV image processing algorithms on the backend service along with a SQL lite database
    - Deployed forms application using IIS Express server
    - Ported OpenCV libraries using EMGU C# wrapper
    - Implemented FFT, Edge detection and noise reduction libraries
- Functionality tester: A cross platform embedded tester using an embedded Linux processor and a FPGA
    - Linux based single board computer (ARM Sitara) for upper level command line control and GPIO
    - Used Angstrom Linux to design a simple C++ application to select between functional tests and type of gate
    - Spartan3E based FPGA fabric for low level interface with DUTs with switchable logic profiles
    - Used Verilog to create gate specific test cases to provide pass/fail flag to the ARM board
- 32-Bit RISC behavioral model (Xilinx ISE and Verilog)
    - Developed chip-level designs for functional and storage modules on a standard RISC architecture
    - Created a non-synthesizable 32-bit RISC model with a 32-bit control word

Academic activities and Awards

Texas Tech University, TX.: Tutor, Electrical Engineering Jan. 2014 – May 2015

- Created instructional videos and assist students on FPGAs and digital logic theory

Texas Tech University, TX.: IT support, IT Solutions Center Aug. 2013 – Nov. 2013

- Provided support on Microsoft products and network related issues

Texas Tech University, TX.: Scholarships

- Ray Butler Scholarship awarded by Texas Tech University 2015
- Russell Seacat Jr. Scholarship awarded by Texas Tech University 2014