HUASONG SHAN

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SUMMARY

- More than 10 years' experience in performance and security of large-scale web applications, cloud computing, data mining, database and telecommunication.
- Strong publication records in computer science, e.g., CCS (top tier conference).

TECHNICAL SKILLS

Proficient Programming Language: **Java/Python/C/Shell/Make/JavaScript/SQL**
Packages and frameworks: **NumPy/Pandas/Trac/Django/Jenkins/Bitten/PhantomJS/d3.js**

WORK EXPERIENCE

(1) Company: Louisiana State University—Research Assistant   2015-2017
Project: Highly available, scalable and secure Web applications
KEY WORDS: JAVA, PYTHON, SHELL, OPENSTACK, Amazon AWS, Azure, CLOUD COMPUTING, PERFORMANCE OPTIMIZATION, APACHE, TOMCAT, MYSQL, PhantomJS, Snort, RUBBoS

- Automatically deploy n-tier web applications in clouds using Java and Shell scripts
- Automatically test, analyze and visualize performance metrics via Python, Shell and Collectl
- Performance and stress test for web applications using JMeter, ApacheBench
- Trace performance bottleneck of largescale web applications by timeline correlation analysis
- Model performance metrics of web applications using queuing network theory and simulate the model using Java Modelling Tools
- Optimize model parameters using feedback control theory and reinforcement learning

Project：Container based Multi-Cloud Management   2016
KEY WORDS: JAVA, PYTHON, SHELL, Docker, Amazon ECS, Mesos, MPI

- Container-based (Docker) virtual cluster managers in multi-cloud environments

(2) Company: Spreadtrum Communications, Inc.—Staff Software Engineer   2008-2015
Project: Automatical Build and Test Platform   as the only core technical developer   2011
KEY WORDS: JAVA, PYTHON, JAVASCRIPT, Jenkins, Bitten, CI/CD

- Manage and implement distributed build using Jenkins and Bitten
- Control different types of test agents (smart phones or computers) and implement parallel distributed testing, so tens of thousands test cases can be done within half an hour

Project: Data Mining System from Bugzilla Database as the project technical leader   2012
KEY WORDS: JAVA, PYTHON, JAVASCRIPT, NUMPY, PANDAS, D3.JS

- Deeply analyze metrics on software management, via invoking Bugzilla REST API, using NumPy/Pandas to mine/analyze advanced metrics (e.g. speed of bug processing, bug-fix duration), and using d3.js to visualize statistics results.

Project: Log Analysis System   as the project technical leader   2013-2015
KEY WORDS: PYTHON, C, JAVASCRIPT, NUMPY, PANDAS, D3.JS, PYQT, MONGODB

- Log crawl from Bugzilla database using Bugzilla REST API
- Log parse, extract and clean into xml files using C
- Log analysis by regular match algorithm in timeline event
- Visualize analysis results (e.g., event flow) using D3.js
- Store and query analysis result using MongoDB
- Implement stand-alone version using PyQT
- Implement on-line version using JavaScript with WebSocket

Project: Infrastructure Group of Protocol Software   as the team member 2008-2015
KEY WORDS: C, Real Time OS (e.g., Threadx)
- Fix hundreds of bugs: thread/timer/memory/debug management modules of mobile phone
- Design and implement "*Method and terminal device for capturing terminal debugging information in real-time manner*" using circle buff to manage critical debugging information.

(3) Company：ZTE (Shanghai)—Software Test Engineer   2006-2007
KEY WORDS: Field Test, System Performance Test
- System performance test, such as Radio Resource Management of 3G telecommunication

EDUCATION

Louisiana State University, Baton Rouge, LA, USA   **Ph.D.** in Computer Science, Dec. 2017
 Dissertation: Very Short Intermittent DDoS Attacks on the Performance of Web Services in Clouds
 Research Area: Distributed Computing, Cloud Computing, Security
Huazhong University of Science and Technology, China **M.S./B.S.** in Computer Science, 2006/ 2003
 Thesis: Research of Mandatory Access Control for SDM4 Object Features
 Research Area: Database Management System, Security and Privacy

SELECTED PUBLICATIONS

1. **Huasong Shan**, Qingyang Wang, and Calton Pu, "Tail Attacks on Web Applications", in Proc. of *the 24th ACM Conference on Computer and Communications Security* (**CCS'17**), Dallas, Texas, October 30-November 3, 2017. (Acceptance rate: 151/836=18%) **(Top tier security conference)**
2. **Huasong Shan**, Qingyang Wang, and Qiben Yan, "Very Short Intermittent DDoS Attacks in an Unsaturated System", in Proc. of *13th EAI International Conference on Security and Privacy in Communication Networks*, Niagara Falls, Canada, October 22-24, 2017.
3. Jian Tao, **Huasong Shan**, Qingyang Wang, and Q. Jim Chen, "White Paper: *Type 2: Enabling Multidisciplinary Collaboration with Containerization Technologies*". in Proc. of *the 1st US-Japan Workshop Enabling Global Collaborations in Big Data Research*, Atlanta, GA, USA, June 5-6, 2017.
4. Jian Tao, Du Jin, **Huasong Shan**, Mona Wong, Andrea Zonca, and Q. Jim Chen, "Poster: *Management and Deployment of Scientific Applications with SIMULOCEAN Science Gateway*". in Proc. of *the 11th Gateway Computing Environments Conference*, San Diego, California, USA, Nov 2-3, 2016.

PATENTS

Huasong Shan, *"Method and terminal device for capturing terminal debugging information in real-time manner"*, Appl. No. CN101945155 A, 2011.