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](https://aws.amazon.com/ec2/?sc_channel=PS&sc_campaign=acquisition_US&sc_publisher=google&sc_medium=ec2_b&sc_content=ec2_e&sc_detail=amazon%20ec2&sc_category=ec2&sc_segment=175055296304&sc_matchtype=e&sc_country=US&s_kwcid=AL!4422!3!175055296304!e!!g!!amazon%20ec2&ef_id=VxaJqgAAAeHqnSqU:20170312142337:s), [Azure](https://azure.microsoft.com/en-us/?v=17.14)**, Cloud computing, Performance Optimization, Apache, Tomcat, MySQL,** [PhantomJS](http://phantomjs.org/), [Snort](https://www.snort.org/), [RUBBoS](http://jmob.ow2.org/rubbos.html)

* 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](http://jmeter.apache.org/), 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](http://jmt.sourceforge.net/)
* Optimize model parameters using feedback control theory and reinforcement learning

Project：Container based Multi-Cloud Management 2016

**Key Words: Java, Python, Shell,** [Docker](https://www.docker.com/)**,** [Amazon ECS](https://aws.amazon.com/ecs/)**,** [Mesos](http://mesos.apache.org/), **MPI**

* [Container-based (Docker) virtual cluster managers in multi-cloud environments](https://figshare.com/articles/Management_and_Deployment_of_Scientific_Applications_with_SIMULOCEAN_Science_Gateway/4522631)

1. Company: [Spreadtrum Communications, Inc.](http://www.spreadtrum.com/en/index.html)—Staff Software Engineer 2008-2015

Project: [Automatical Build and Test Platform](http://www.spreadtrum.com/cn/center.html) as the only core technical developer 2011

**Key Words: Java, Python, JavaScript,** [**Jenkins**](https://jenkins.io/index.html), [**Bitten**](http://bitten.edgewall.org)**, 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](https://monadyn.github.io/img/iBug.jpg) 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](https://wiki.mozilla.org/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](https://monadyn.github.io/img/iLog.jpg) 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](https://wiki.mozilla.org/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*](http://www.google.co.uk/patents/CN101945155A?hl=zh-CN&cl=en)*”* using circle buff to manage critical debugging information.

1. 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](https://monadyn.github.io/Papers/shan_diss.pdf)

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](https://monadyn.github.io/Papers/CCS17-Tail-Att-camera.pdf)”, 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](https://monadyn.github.io/Papers/secureComm17-VSIDDoS.pdf)”, inProc. 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*](https://monadyn.github.io/Papers/simulocean.pdf)”. 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*](https://figshare.com/articles/Management_and_Deployment_of_Scientific_Applications_with_SIMULOCEAN_Science_Gateway/4522631)”. 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*](http://www.google.co.uk/patents/CN101945155A?hl=zh-CN&cl=en)”, Appl. No. CN101945155 A, 2011.