Boyang (Jerry) Peng

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EDUCATION

M.S (with thesis) **Computer Science,** ***University of Illinois, Urbana-Champaign*** June 2015
GPA: 4.0/4.0

B.S. **Computer Engineering,** ***University of California, Santa Barbara*** June 2013
GPA Cumulative: 3.76/4.00, Major: 3.92/4.00
Graduated with high honors

TECHNICAL SKILLS/ABILITIES

Software Design

- Knowledgeable of design concepts in the field of distributed systems, cloud computing, and big data
- Experienced in working with distributed processing platforms especially distributed stream processing platforms
- Experienced at working with and managing large code bases

Programming

- **Experienced and efficient at programming in C/C++ and JAVA**
- Others programming languages fluent in: Python, PHP Verilog HDL, C#, HTML, Javascript/Ajax
- Knowledgeable and experienced in web design and development

WORK HISTORY

Apache Storm Committer and PMC (Project Management Committee) **Member,** December 2015 – Present
Apache Software Foundation

- Actively engage with the open source community, implement critical improvements and features, and drive the overall direction of the project
- Apache Storm is a popular open source distributed data stream processing platform used by many companies to provide low latency processing solutions for their products and services

Software Engineer, *Low Latency Team, Yahoo!* July 2015 – Present

- R&D on distributed data stream processing platforms to provide Yahoo with high throughput low latency solutions
- Work with big data platforms to build data pipelines within Yahoo
- Contribute to open source platforms such as Apache Storm, Apache Spark, and Apache Kafka

Graduate Software Engineer Intern, *Big Data/Platforms group*, *Yahoo!* May 2014 – August 2014

- Design and implement a resource aware scheduler for the Storm distributed low-latency data stream processing system
- Design and implement intelligent task placement strategies to assign tasks to execute on nodes
- Implement comprehensive tests to validate performance and behavior of scheduler

Graduate Software Engineer Intern, *Many Integrated Core Software Group, Intel* June 2013 – August 2013

- Develop novel memory allocation models for non-homogeneous memory systems using Non-Uniform Memory Allocation (NUMA) techniques

Engineering Intern, *Many Integrated Core Software Group, Intel* June 2012-September 2012

- Parallelize common sequential algorithms to exploit the computational efficiency of many core processing units
- Design algorithms to use different programming paradigms to identify which programming paradigm is best for what scenario on a many core processing units
- Conduct performance analysis on various workloads to identify inefficiencies in the compilation process

Research Assistant, *iTrust, ECE Department, UCSB* September 2011 – June 2013

- Develop a novel trustworthy information distribution and retrieval network, which we call iTrust, with no centralized administration and no centralized control
- Devise strategies to maintain the fidelity of the network by identifying possible vulnerabilities in the system
- Use network test benches such as Emulab and PlanetLab to emulate system

Web Based Software Developer*, Gauchospace, UCSB* September 2010 – June 2012

- Design and implement both server side and client side applications
- Research and investigate the feasibility of certain web based technologies
- Develop customized applications on the Moodle platform
- Fix server hardware malfunctions

PUBLICATIONS

Boyang Peng, Le Xu, Indranil Gupta. "Stela: Enabling Stream Processing Systems to Scale-in and Scale-out On-demand" in Proc. *IEEE International Conference on Cloud Engineering (IC2E) 2016* (http://web.engr.illinois.edu/~bpeng/files/stela.pdf)

Boyang Peng, Mohammad Hosseini, Zhihao Hong, Reza Farivar, Roy Campbell. "R-Storm: Resource Aware Scheduling in Storm" in Proc. *ACM/IFIP/USENIX Middleware 2015* (http://web.engr.illinois.edu/~bpeng/files/r-storm.pdf)

Boyang Peng, L. E. Moser, P. M. Melliar-Smith, Y. T. Chuang, I. Michel Lombera. "A Distributed Ranking Algorithm for the iTrust Information Search and Retrieval System" in Proc. *9th International Conference on Web Information Systems and Technologies*, 2013. (http://web.engr.illinois.edu/~bpeng/files/iTrustRanking.pdf)

PROJECTS

Elasticity in Storm *research as part of Distributed Protocols Research Group, UIUC* January 2014 – Current

- Allows the Storm distributed processing framework capable of dealing with dynamic changes in membership in the cluster
- Allows Storm to better utilize existing hardware resources based on the computational load
- Design task migration strategies for scale-in or scale-out operations within the cluster

Senior Capstone Project(Team Lead) *in partnership with NASA's Jet Propulsion Lab* January 2013 – June 2013

- This project will create an integrated system of multiple Microsoft Kinect sensors and large format displays to create a naturalized viewing of 3D panoramas on non-panoramic screens, similar to looking outside a 'virtual' window.
- As Team Lead, I not only spearhead the architectural design for our software but also managed my other team members.
- Technologies used: Microsoft Kinect SDK, Unity3D Rendering Engine, Network Sockets, C#

iTrust *in partnership with the Electrical and Computer Engineering Department, UCSB* September 2011 – June 2013

- In this NSF research project, we have developed a distributed and decentralized publication, search and retrieval system, named iTrust. Our initial implementation of iTrust, based on the HyperText Transfer Protocol (HTTP), is most appropriate for desktop or laptop computers on the Internet. We have also developed a version of iTrust for mobile phones using the Short Message Service (SMS). To guard against the risk that both the Internet and the cellular telephony infrastructure are disabled, we have developed a Wi-Fi Direct version of iTrust for mobile ad-hoc networks
- Technologies used: PHP, Javascript, Java, cURL, JSON, PECL, SQLite,

Web-based Graphing Utilities *in partnership with Gauchospace, UCSB* September 2010 – June 2012

- These utilities were developed for Gauchospace, UCSB's main course management website. These utilities allow both students and faculty to view course data such as grades for students and activity reports for professors in a graphical view within a web browser.
- Technologies used: Sencha Ext JS, AJAX, PHP, HTML5

OTHER SKILLS

Language

Fluent in reading, writing, and speaking both in English and Chinese

Somewhat fluent in Spanish

For more information please visit www.cs.uiuc.edu/~bpeng