Yuduo Wu

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Education

University of California, Davis Davis, CA
Master of Science, Electrical and Computer Engineering 2013-2015
Advisor: Professor John D. Owens
Research: Parallel Computing (GPGPU), Graph Analytics
Thesis: "Performance Characterization of High-Level Programming Models for GPU Graph Analytics"

Macau University of Science and Technology Taipa, Macau
Bachelor of Science, Electronic Information Technology 2009-2013

Employment

Software Engineer Sept 2015-
IBM, Cloud Division, San Jose, CA
- Write robust server- and client-side code for IBM Bluemix platform based cloud software applications
- Define, implement, and maintain scalable REST APIs, command line interface in Python and Golang
- Design and develop health check, backup and metrics monitoring for service reliability and analytics
- Analyze, optimize and dramatically reduce the latency (∼30-50%) of the response times for the APIs

Graduate Student Researcher Dec 2013-Sept 2015
Department of Electrical and Computer Engineering, University of California, Davis, CA
- Implemented Boruvka's parallel minimum spanning tree (MST) algorithm on GPU with C++/CUDA
- Achieved up to ∼120× speedups against a popular serial C++ implementation (Boost graph library)
- Contributed to an open source project (Gunrock) for high-performance large-scale graph processing
- Analyzed and characterized GPU graph analytics parallel programming models and their trade-offs

Internship (xDATA Summer Workshop) Jun-Sept 2014, 2015
Defense Advanced Research Projects Agency (DARPA), Arlington, VA
- Built an easy-to-use pure C and simple Python interfaces for Gunrock to facilitate external developers
- Implemented graph algorithms to compute attributes to generated JSON used for data visualizations

Awards & Honers

IBM Manager's Choice Award, IBM May 2016
Distinguished Paper Award, Principles and Practice of Parallel Programming (PPoPP'16) Mar 2016
IBM Solutions Excellence Award (EA), IBM Dec 2015
Best Paper Finalist, IEEE International Symposium on Workload Characterization (IISWC'15) Oct 2015
Dean's Honor List Scholarship, Macau University of Science and Technology Sept 2011,2012,2013
Crystal Cup Award, Top 3 in GPA, Macau University of Science and Technology Sept 2011,2012,2013
Nam Kwong Academic Year Scholarship, Nam Kwong (Group) Co., Ltd, Macau Sept 2012

Skills

Familiar: Python, C/C++, Golang, Git, LaTeX, Shell/Bash scripting, Unix/Linux, JavaScript
Prior Experience: CUDA, R, Java, Haskell, MATLAB, MySQL, Caffe, Spark, Node.js, Scala

Certifications

Scala Programming for Data Science, IBM — Aug 2016
Big Data Spark Foundations, IBM — Jun 2016
API Management Concepts, IBM — May 2016
edX Verified Certificate for Scalable Machine Learning, edX — July 2015

Publications

Refereed Publications

Yangzihao Wang, Andrew Davidson, Yuechao Pan, Yuduo Wu, Andy Riffel, and John D. Owens. "Gunrock: A High-Performance Graph Processing Library on the GPU". In *Proceedings of the 21st ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*, PPoPP 2016, pages 11:1-11:12. *March 2016*. Distinguished Paper.

Yuduo Wu, Yangzihao Wang, Yuechao Pan, Carl Yang, and John D. Owens. "Performance Characterization of High-Level Programming Models for GPU Graph Analytics". In *IEEE International Symposium on Workload Characterization*, IISWC 2015, pages 66-75. October 2015. Best Paper finalist.

Other Publications

Yuechao Pan, Yangzihao Wang, Yuduo Wu, Carl Yang, and John D. Owens. "Multi-GPU Graph Analytics". CoRR, abs/1504.04804(1504.04804v2), April 2016.

Yuduo Wu. "Performance Characterization of High-Level Programming Models for GPU Graph Analytics". *ProQuest (Master's thesis at University of California, Davis)*, September 2015.

Leadership & Service

Vice President — 2012-2013
IEEE Student Branch of Macau University of Science and Technology
Managed IEEE student members and organized academic activities.

Coordinator — 2011-2012
Macau Volunteer Group
Volunteered to teach rural elementary students and organized voluntary work.