# 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

**Summer Internship (xDATA 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.