# 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

**IBM**, Software Engineer, San Jose, CA — Sept 2015 -
- 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

**UC Davis**, Graduate Student Researcher, Davis, CA — Dec 2013 - Sept 2015
- 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

**DARPA**, Internship (xDATA Workshop), Arlington, VA — Jun - Sept 2014, Jun - Sept 2015
- Built an easy-to-use pure C and simple Python interfaces for Gunrock to facilitate external developers
- Implemented graph algorithms and compute attributes to generate JSON used for data visualizations

## Awards & Honers

**IBM Manager's Choice Award**, IBM — May 2016, Sept 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, PHP, MATLAB, MySQL, Caffe, Spark, 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

Yangzihao Wang, Yuechao Pan, Andrew Davidson, **Yuduo Wu**, Carl Yang, Leyuan Wang, Muhammad Osama, Chenshan Yuan, Weitang Liu, Andy T. Riffel, and John D. Owens. "Gunrock: GPU Graph Analytics". *CoRR, abs/1701.01170(1701.01170v1), January 2017*.

Yuechao Pan, Yangzihao Wang, **Yuduo Wu**, Carl Yang, and John D. Owens. "Multi-GPU Graph Analytics". In *Proceedings of the 31st IEEE International Parallel & Distributed Processing Symposium*, IPDPS'17, *May 2017*.

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'16, 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'15, pages 66-75. *October 2015*. **Best Paper finalist**.

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

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