2250 Kemper Hall, University of California, Davis
One Shields Avenue, Davis, CA 95616
+1 (530) 750 9016
yzhwang@ucdavis.edu
http://www.idav.ucdavis.edu/~yzhwang/

Yangzihao Wang

Education

2011–present **Ph.D. Candidate, Computer Science**, *University of California, Davis*, *GPA: 3.87/4.0*.
Advisor: Prof. John D. Owens

2008–2011 **M.E., Software Engineering**, *Beihang University*.

2003–2007 **B.E., Computer Science**, *Beihang University*.

Selected Honors and Awards

2014 NVIDIA Graduate Fellowship Finalist

2007 Outstanding Graduates of Colleges and Universities in Beijing *top 10%*

Experience Highlights

Aug-2011–present **Graduate Student Researcher**, *Institute of Data Analysis and Visualization, UC Davis*.
Research Interests: structure of parallelism in irregular algorithms on the GPU; programming model for graph analytics on the GPU.
- CUDA Multi-GPU sorting system based on samplesort;
  - Designed the multi-GPU cluster sorting system with MPI and CUDA;
  - Achieved comparable performance with sorting systems on CPU cluster or supercomputer.
- Gunrock: a stable, powerful, and forward-looking substrate for GPU-based graph-centric research and development (open-sourced at: http://gunrock.github.io);
  - Led a research team of 8 graduate students;
  - Proposed the data-centric programming model for GPU graph analytics;
  - Designed the system framework and API set;
  - Implemented several critical optimizations for the system core;
  - Achieved the best performance of any programmable GPU+graph library.

Fall 2015 **Software Engineer Intern**, *Google*.
Worked in search infrastructure team, built a content-free URL quality score estimation service for index selection.

Summer 2013–2016 **Summer Research Intern**, *DARPA*.
Worked on expanding features and increasing the performance of Gunrock. Worked closely with multiple research groups and companies on using Gunrock for large-scale graph data analysis on real-world datasets.

Summer 2012 **Co-op Engineer**, *AMD Research*.
Ported cudaraster (a state-of-the-art software rasterizer) to OpenCL.

Aug-2009–Mar-2011 **Research Assistant**, *State Key Lab of Virtual Reality Technology and Systems, Beihang University*.
Designed and implemented a sort-first cluster rendering system. Worked on several graphics research topics such as water wave simulation, collision detection, and rendering load balancing.

External Talks

Mar, 2016 **GTC'16**, *Gunrock: A Fast and Programmable Multi-GPU Graph Processing Library*.

Apr, 2015 **Oracle Labs**, *Gunrock: A High Performance Graph Processing Library on the GPU*.

Jan, 2015 **NVIDIA Research**, *High-Performance Graph Processing Programming Model on the GPU*.

Mar, 2014 **GTC'14**, *High-Performance Graph Primitives on GPUs: Design and Implementation of Gunrock*.

Professional Skills

Proficient: C/C++, CUDA, MPI, LaTeX, Linux development

Familiar: Python, OpenCL, OpenGL, git, Spark, Caffe, shell scripting, Html/CSS

Course Certification

2015 edX Verified Certificate for Introduction to Big Data with Apache Spark *edX*

2012 Introduction to Artificial Intelligence *Udacity*

Professional Service

Reviewer: IEEE Transactions on Parallel and Distributed Systems

PC Member: The 1st GPUTech Workshop at ICCSA 2016

Publications

Leyuan Wang, Yangzihao Wang, Carl Yang, and John D. Owens. A comparative study on exact triangle counting algorithms on the GPU. In *Proceedings of the 1st High Performance Graph Processing Workshop*, HPGP '16, May 2016.

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, March 2016. Distinguished Paper.

Yuduo Wu, Yangzihao Wang, Yuechao Pan, Carl Yang, and John D. Owens. Performance characterization for high-level programming models for GPU graph analytics (best paper finalist). In *IEEE International Symposium on Workload Characterization*, IISWC 2015, October 2015. Best Paper finalist.

Carl Yang, Yangzihao Wang, and John D. Owens. Fast sparse matrix and sparse vector multiplication algorithm on the GPU. In *Graph Algorithms Building Blocks*, GABB 2015, May 2015.

Yuechao Pan, Yangzihao Wang, Yuduo Wu, Carl Yang, and John D. Owens. Multi-GPU graph analytics. *CoRR*, abs/1504.04804(1504.04804v1), April 2015.

Afton Geil, Yangzihao Wang, and John D. Owens. WTF, GPU! Computing Twitter's who-to-follow on the GPU. In *Proceedings of the Second ACM Conference on Online Social Networks*, COSN '14, October 2014.