Hongkuan Zhou

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Education

University of Michigan-Shanghai Jiao Tong University Joint Institute — Shanghai, China
B.S. in Electrical Computer Engineering — *Aug. 2013 – May 2017*

University of Southern California — Los Angeles, US
M.S. in Computer Engineering — *Aug. 2017 – May 2019*
GPA:4.00/4.00

University of Southern California — Los Angeles, US
Ph.D. in Computer Engineering — *Aug. 2019 – Present*
Advisor: Professor Viktor K. Prasanna Current GPA: 4.00/4.00

Working Experience

Research Assistant — Dec. 2017 – Present
FPGA/Parallel Computing Lab, USC — *Los Angeles, US*

- Developed the knowledge base for a dynamic compiler to achieve near-ASIC performance on reconfigurable processors in the SDH project.
- Developed novel minibatch sampling based training algorithms for Graph Neural Networks (GNNs) which scale to large graphs. Designed and implemented optimized parallel algorithms on CPU and GPU. Processed and published two node classification datasets from raw data in social networks.
- Developed unviersal GNN inference framework for real-time and large scale GNN applications using channel pruning to meet requirements of vairous inference scenarios.
- Working on privacy-preserving training and inference of GNNs for medical or knowledge graph related problems.

Teaching Assistant — Aug. 2017 – Present
Ming Hsieh Department of Electrical and Computer Engineering, USC — *Los Angeles, US*

- Worked as the teaching assistant for the course *Parallel and Distributed Computation* under Professor Viktor K. Prasanna.
- Worked and currently working as the teaching assistant for the course *Computer System Architecture* under Professor Michel Dubois.

Publications

- **First Author:** Accelerating Large Scale Real-Time GNN Inference using Channel Pruning, *Submitted to 47th International Conference on Very Large Data Bases (VLDB)*, 2021
- **Co-First Author:** Accurate, Efficient and Scalable Training of Graph Neural Networks, *Journal of Parallel and Distributed Computing (JPDC)*, 2020
- **Co-First Author:** GraphSAINT: Graph Sampling Based Inductive Learning Method, *International Conference on Learning Representations (ICLR)*, 2020
- **First Author:** Design and Implementation of Knowledge Base for Runtime Management of Software Defined Hardware, *IEEE High Performance Extreme Computing Conference (HPEC)*, 2019 **(Best Student Paper Nominee)**
- **Co-First Author:** Accurate, Efficient and Scalable Graph Embedding, *33rd International Parallel and Distributed Processing Symposium (IPDPS)*, 2019

Technical Strengths

Computer Languages: C/C++, Python, Matlab, Verilog, MySQL
Developer Tools: Git, Docker, Tensorflow, PyTorch, Bash, LaTeX
Language: Chinese, English, Japanese (N2 level), German (B1 Level)