

XULONG TANG

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EDUCATION

Pennsylvania State University

2014 - present

Ph.D. Candidate in Computer Science and Engineering

Advisor: Prof. Mahmut Taylan Kandemir

Overall GPA: 3.88/4.0

College of William and Mary

2014

Ph.D. Candidate in Computer Science

Advisor: Prof. Xipeng Shen

Overall GPA: 4.0/4.0

University of Science and Technology of China

2010 - 2013

M.S. in Computer Science and Technology

Advisor: Prof. Hong An

Overall GPA: 3.6/4.0

Harbin Institute of Technology

2006 - 2010

B.S. in Computer Science and Technology

Overall GPA: 3.4/4.0

RESEARCH EXPERIENCE

Pennsylvania State University

2014 - present

Microsystems Design Lab (MDL)

- Dynamic parallelism optimization for irregular applications on GPGPUs.
- Compiler-assisted data locality optimization on manycore platforms.

SAMSUNG Research America (SRA)

Summer 2015

Mentor: Liangjun Zhang

Sunnyvale, CA

- Modeling the memory hierarchy of high-performance, low-power mobile GPUs.

College of William and Mary

2014

Compilers and Adaptive Programming Systems Lab

- Understanding CPU-GPU co-run degradations on integrated heterogeneous processors.

ICT of Chinese Academy of Science, Beijing

2011 - 2013

Advisor: Prof. Dongrui Fan

China

- Built a two-layer video codec benchmark suite.
- Modified x264 codec into a fine-grain pipelined version to achieve task-level parallelism.

University of Science and Technology of China

2010 - 2011

Advisor: Prof. Hong An

China

- Characterized program phases using Rodinia benchmark suite.

PUBLICATIONS

- [C1]. **Xulong Tang**, Ashutosh Pattnaik, Huaipan Jiang, Onur Kayiran, Adwait Jog, Sreepathi Pai, Mohamed Ibrahim, Mahmut Kandemir, Chita Das “Controlled Kernel Launch for Dynamic Parallelism in GPUs”, *In Proceedings of 23th International Symposium on High-Performance Computer Architecture*. (**HPCA 2017**)
- [C2]. **Xulong Tang**, Mahmut Kandemir, Praveen Yedlapalli, Jagadish Kotra “Improving Bank-Level Parallelism for Irregular Applications”, *In Proceedings of 49th Annual IEEE/ACM International Symposium on Microarchitecture*. (**MICRO 2016**) **Best Paper Nomination**.
- [C3]. Ashutosh Pattnaik, **Xulong Tang**, Adwait Jog, Onur Kayiran, Asit K. Mishra, Mahmut T. Kandemir, Onur Mutlu, Chita R. Das “Scheduling Techniques for GPU Architectures with Processing-In-Memory Capabilities”, *In Proceedings of 25th International Conference on Parallel Architectures and Compilation Techniques*. (**PACT 2016**)
- [C4]. Onur Kayiran, Adwait Jog, Ashutosh Pattnaik, Rachata Ausavarungnirun, **Xulong Tang**, Mahmut T. Kandemir, Gabriel H. Loh, Onur Mutlu, Chita R. Das “ μ C-States: Fine-grained GPU Datapath Power Management”, *In Proceedings of 25th International Conference on Parallel Architectures and Compilation Techniques*. (**PACT 2016**)
- [C5]. Wei Ding, **Xulong Tang**, Mahmut Taylan Kandemir, Yuanrui Zhang, Emre Kultursay “Optimizing Off-Chip Accesses in Manycores”, *In Proceedings of 36th annual ACM SIGPLAN conference on Programming Language Design and Implementation*. (**PLDI 2015**)
- [C6]. Mahmut Taylan Kandemir, Hui Zhao, **Xulong Tang**, Mustafa Karaky, “Memory Row Reuse Distance and its Role in Optimizing Application Performance”, *In Proceedings of ACM International Conference on Measurement and Modeling of Computer Systems*. (**SIGMETRICS 2015**)
- [C7]. **Xulong Tang**, Hong An, Gongjin Sun, Dongrui Fan, “A Video Coding Benchmark Suite for Evaluation of Processor Capability”, *In Proceedings of 14th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing*. (**SNPD 2013**)
- [C8]. Gu Liu, Hong An, Xiaoqiang Li, Wei Zhou, Xuechao Wei, **Xulong Tang**, “FlexBFS: A Parallelism-aware Implementation of Breadth-First Search on GPU”, *Accepted as a poster by 17th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*. (**PPoPP 2012**)

TECHNICAL STRENGTHS

Programming Tools	C/C++, CUDA, OpenCL, Python, OpenMP, MPI, Matlab GPGPU-sim, Multi2Sim, SimpleScalar, Valgrind
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REFERENCES

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