Shuhao Zhang **shuhao.zhang@comp.nus.edu.sg**

Education

Ph.D. in Computer Science 2019

National University of Singapore, Singapore (NUS)*

Doctoral Dissertation: Scaling Data Stream Processing on Multicore Architectures. Supervisor: Prof. Bingsheng He

*: 2014∼2016 in Nanyang Technological University with the same supervisor

B.E(hons) in Computer Engineering Aug 2014

Nanyang Technological University (NTU), Singapore (*GPA 4.83/5*)

Honors Thesis: Towards Portable and Efficient Query Processing on Parallel CPU/GPU Architectures. Supervisor: Prof. Bingsheng He

Awards

- Research Achievement Award (NUS) 2018 – 2019
- SIGMOD 2019 Travel Award 2019
- SAP PhD Research Scholarships 2014 – 2018
- Research Achievement Award (NUS) 2017 – 2018
- Dean's list student (NTU) 2010 – 2013
- Best peer tutor/coach awards (NTU) 2012 – 2013
- AY11-12 URECA Certificate (NTU) 2011 – 2012
- Senior Middle 3 Singapore Government Undergraduate Scholarship 2010 – 2014

Conference Publications

1. **Shuhao Zhang**, Yingjun Wu, Feng Zhang, Bingsheng He, "Towards Concurrent Stateful Stream Processing on Multicore Processors" *Under Review*
2. Jieliang Ang, Tianyuan Fu, Johns Paul, **Shuhao Zhang**, Bingsheng He, Teddy Sison David Wenceslao, Sien Yi Tan, "TraV: An Interactive Trajectory Exploration System For Massive Data Sets" *The Fifth IEEE International Conference on Multimedia Big Data (IEEE BIGMM) demo track, 2019*
3. **Shuhao Zhang**, Jiong He, Amelie Chi Zhou, Bingsheng He, "BriskStream: Scaling Data Stream Processing on Shared-Memory Multicore Architectures" *International Conference on Management of Data (SIGMOD), 2019*, citation:0
4. **Shuhao Zhang**, Bingsheng He, Daniel Dahlmeier, Amelie Chi Zhou, Thomas Heinze, "Revisiting the design of data stream processing systems on multi-core processors" *IEEE International Conference on Data Engineering (ICDE), 2017, citation:14*
5. **Shuhao Zhang**, Hoang Tam Vo, Daniel Dahlmeier, Bingsheng He, "Multi-Query Optimization for Complex Event Processing in SAP ESP" *IEEE International Conference on Data Engineering (ICDE), 2017, citation:5*
6. Shanjiang Tang, Bingsheng He, **Shuhao Zhang**, Zhaojie Niu, "Elastic Multi-Resource Fairness: Balancing Fairness and Efficiency in Coupled CPU-GPU Architectures" *ACM/IEEE Supercomputing Conference (SC), 2016, citation:13*.
7. Jiong He, **Shuhao Zhang**, Bingsheng He, "In-Cache Query Co-Processing on Coupled CPU-GPU Architectures", International Conference on Very Large Data Bases (VLDB), 2014, citation:65.
8. **Shuhao Zhang**, Jiong He, Bingsheng He, Mian Lu, "OmniDB: Towards Portable and Efficient Query Processing on Parallel CPU/GPU Architectures" *International Conference on Very Large Data Bases (VLDB) demo track, 2013, citation:53*.

Journal Publications

1. **Shuhao Zhang**, Feng Zhang, Yingjun Wu, Paul Johns, Bingsheng He, "Hardware-Conscious Stream Processing: A Survey" *Under minor revision in SIGMOD Record, impact factor:1.366, citation:0*
2. Feng Zhang, Jidong Zhai, Bingsheng He, **Shuhao Zhang**, Wenguang Chen, "Understanding Co-running Behaviors on Integrated CPU/GPU Architectures" *IEEE Transactions on Parallel & Distributed Systems (TPDS), 2017, impact factor:3.402, citation:26*
3. Zeke Wang, **Shuhao Zhang**, Bingsheng He,Wei Zhang, "Melia: A MapReduce Framework on OpenCL-Based FPGAs" *IEEE Transactions on Parallel & Distributed Systems (TPDS), 2016, impact factor:3.402, citation:32*.

Patents

1. **Shuhao Zhang**, Bingsheng He, Daniel Hermann Richard Dahlmeier, "Efficient execution of data stream processing systems on multi-core processors", *US Patent App. 15/348,932*, 2018.
2. **Shuhao Zhang**, Hoang Tam Vo, Daniel Hermann Richard Dahlmeier, Bingsheng He, "Multi-query optimizer for complex event processing", *US Patent App. 9,953,056*, 2018.

Work Experience

Research Scientist II (RSE 3) Sep 2019 – present
Institute for Infocomm Research A*STAR, Singapore
My research involves investigating high performance secure data processing at edge with Intel SGX.

Research Fellow/Assistant Aug 2018 – Sep 2019
NUS-Grab AI Lab Singapore
My research involves investigating new opportunities to enhance real-time trajectory data management including design of scalable trajectory query processing systems.
A trajectory query processing and visualization system is developed by students under my co-supervision, and a demo paper is published.

Research Associate (Ph.D scholars) Aug 2014 – Aug 2018
Research & Innovation, SAP Singapore
My research involves investigating new opportunities to enhance complex event processing including design of new framework with related techniques and software modules.
Two patents filed with me being first inventor.

Research Assistant (Internship) Jun 2012 – Aug 2013
Division of DCT, Data Storage Institute
Contributed on varies projects of cloud security area.