HONGYU MIAO

miaoh@purdue.edu ⋄ https://engineering.purdue.edu/~miaoh
School of Electrical and Computer Engineering, Purdue University
465 Northwestern Ave, West Lafayette, IN 47907

RESEARCH INTERESTS

Computer systems: operating systems, networking, compiler, architecture, and runtime systems for emerging applications.

Recent focus: systems for real-time data analytics, machine learning, and tinyML on modern hardware, e.g., manycore CPUs, 3D-stacked memory, and embedded microcontrollers.

Past work: OS kernels, system virtualization, and RPC systems.

EDUCATION

Ph.D. in Electrical and Computer Engineering August 2015 – Present
Purdue University, West Lafayette, IN, USA
Advisor: Dr. Felix Xiaozhu Lin
Committee: Dr. Felix Xiaozhu Lin, Dr. Kathryn S. McKinley, Dr. Mithuna S. Thottethodi, and Dr. Y. Charlie Hu

M.S. in Computer Science August 2012 – June 2015
Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China

B.S. in Computer Science August 2008 – June 2012
Lanzhou University, Lanzhou, China

INTERNSHIP

Research Intern May 2017 – Auguest 2017
Systems Research Group, Microsoft Research, Redmond, WA.
Mentors: Dr. Myeongjae Jeon and Dr. Gennady Pekhimenko
Project: Optimizing stream analytics pipelines on high bandwidth memory.

PUBLICATIONS

[1] **Hongyu Miao** and Felix Xiaozhu Lin. Enabling Large Neural Networks on Tiny Microcontrollers with Swapping. arXiv:2101.08744. (***Under Review***).

[2] **Hongyu Miao**, Myeongjae Jeon, Gennady Pekhimenko, Kathryn S. McKinley, and Felix Xiaozhu Lin. StreamBox-HBM: Stream Analytics on High Bandwidth Hybrid Memory. *The 24th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (**ASPLOS 2019**)*, pp. 167-181, Providence, RI, April 2019. Acceptance rate: 21% (74/350).

[3] **Hongyu Miao**, Heejin Park, Myeongjae Jeon, Gennady Pekhimenko, Kathryn S. McKinley, and Felix Xiaozhu Lin. StreamBox: Modern stream processing on a multicore machine. *USENIX Annual Technical Conference (**USENIX ATC 2017**)*, pp. 617-629, Santa Clara, CA, July 2017. Acceptance rate: 21% (60/238).

[4] **Hongyu Miao** and Felix Xiaozhu Lin. Tell Your Graphics Stack That The Display Is Circular. *The 17th International Workshop on Mobile Computing Systems and Applications (**HotMobile 2016**)*, pp. 57-62, St. Augustine, FL, February 2016. Acceptance rate: 33% (18/55).

HONORS AND AWARDS

ACM ASPLOS 2019 Student Travel Grant	2019
ACM ASPLOS 2018 Student Travel Grant	2018
USENIX ATC 2017 Student Travel Grant	2017
ACM HotMobile 2016 Student Travel Grant	2016

Purdue ECE Fellowship, Purdue University 2015

Dawning Scholarship, Chinese Academy of Sciences 2013

POSTERS

Hongyu Miao, Myeongjae Jeon, Gennady Pekhimenko, Kathryn S. McKinley, and Felix Xiaozhu Lin. StreamBox-HBM: Stream Analytics on High Bandwidth Hybrid Memory. *Poster at ASPLOS 2019*, Providence, RI, April 2019.

Hongyu Miao, Heejin Park, Myeongjae Jeon, Gennady Pekhimenko, Kathryn S. McKinley, and Felix Xiaozhu Lin. StreamBox: Modern stream processing on a multicore machine. *Poster at USENIX ATC 2017*, Santa Clara, CA, July 2017.

Hongyu Miao and Felix Xiaozhu Lin. Tell Your Graphics Stack That The Display Is Circular. *Poster at HotMobile 2016*, Augustine, FL, February 2016.

TALKS

StreamBox-HBM: Stream Analytics on High Bandwidth Hybrid Memory

- *ASPLOS 2019*, Providence, RI, April 2019

StreamBox: Modern Stream Processing on a Multicore Machine

- *USENIX ATC 2017*, Santa Clara, CA, July 2017
- *Microsoft Research*, Redmond, WA, July 2017
- *Purdue ECE Graduate Seminar*, West Lafayette, IN, September 2017

Tell Your Graphics Stack That the Display Is Circular

- *HotMobile 2016*, St. Augustine, FL, February 2016
- *Purdue ECE Graduate Seminar*, West Lafayette, IN, March 2016

REFERENCES

Available upon request.