

# HONGYU MIAO

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## RESEARCH INTERESTS

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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

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**Ph.D. in Electrical and Computer Engineering** August 2015 – August 2021 (Expected)

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

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**Research Intern** May 2017 – August 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

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- [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

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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

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**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

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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

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### Dr. Felix Xiaozhu Lin

Associate Professor of Computer Science  
University of Virginia  
Charlottesville, VA 22903  
Webpage: <http://felixlin.org/>  
Email: [felixlin@virginia.edu](mailto:felixlin@virginia.edu)

### Dr. Gennady Pekhimenko

Assistant Professor of Computer Science  
University of Toronto  
Toronto ON, M5S2E4  
Webpage: <http://www.cs.toronto.edu/~pekhimenko/>  
Email: [pekhimenko@cs.toronto.edu](mailto:pekhimenko@cs.toronto.edu)

### Dr. Kathryn S. McKinley

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