Yixin Luo

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EDUCATION

CARNEGIE MELLON UNIVERSITY
PhD in Computer Science
Dec 2017 | Pittsburgh, PA

UNIVERSITY OF MICHIGAN
BS in Computer Science
May 2012 | Ann Arbor, MI
Dean's List 2010, 2011, EECS Scholar 2010

SHANGHAI JIAO TONG UNIVERSITY
BS in Electrical Engineering
May 2012 | Shanghai, China
Dean's List 2009

LINKS

Github:// **camellyx**
LinkedIn:// **luoyixin**

COURSEWORK

GRADUATE
Deep Learning
Advanced Database Systems
Deep Reinforcement Learning
Machine Learning
Optimizing Compilers
Operating Systems and Distributed Systems
Advanced Cloud Computing
Graduate Algorithms
Computer Architecture
Computer Networks
(Teaching Assistant)
Parallel Computer Arch. and Programming
Parallel Computer Architecture

UNDERGRADUATE
Computer Architecture + Major Design Proj.
VLSI Design + Major Design Proj.
Microprocessor-Based Systems
Operating Systems
Artificial Intelligence
Honors Mathematics

SKILLS

PROGRAMMING
Over 10,000 lines:
C++ • Python • Matlab • Shell • Verilog • LaTeX
Familiar:
Perl • HTML • Windows Batch • TensorFlow • PyTorch
Simulator & Tools:
Intel Pin • HSPICE • Cadence tools • gem5 • Multi2Sim • MySQL/PostgreSQL

EXPERIENCE

SEAGATE TECHNOLOGY | Engineering Intern
May 2015 – Oct. 2015; May 2016 – Aug 2016 | Lakeview, CA
- Developed ten new techniques and four new models to improve SSD lifetime
- Developed new tool to automatically test and analyze seven types of SSD errors
- Collected and analyzed 700 GB of SSD error data from real devices using data mining and statistical modeling techniques

MICROSOFT RESEARCH | Research Intern
May 2014 – Aug. 2014 | Redmond, WA
- Developed new server architecture to reduce datacenter TCO by 2.7%.
- Characterized memory error vulnerability of three important production data-intensive applications running in datacenters

RESEARCH

CARNEGIE MELLON UNIVERSITY | Graduate Research Assistant
Sep. 2012 – Present | Pittsburgh, PA
Worked with Prof. **Onur Mutlu** on improving storage and memory reliability, published 10 academic papers in Proceedings of the IEEE, MICRO, HPCA, DSN, JSAC, MSST, etc.

UNIVERSITY OF MICHIGAN | Research Assistant
May 2011 – May 2012 | Ann Arbor, MI
Worded with Prof. **Marios C. Papaefthymiou** and Prof. **Thomas F. Wenisch** on **Computational Sprinting** of manycore processors on mobile devices that improves the responsiveness of interactive applications by 10×. Worked with Prof. **Todd M. Austin** and Dr. **Joseph L. Greathouse** on architecture support for **Unlimited Watchpoints** that accelerates dynamic software analysis by 9×.

AWARDS

2017 DFRWS EU Best Paper Award
2015 HPCA Best Paper Runner Up
2012 HPCA Best Paper Award

SELECTED PUBLICATIONS

(Full publication list is available on my website.)

[1] Y. Cai, S. Ghose, E. F. Haratsch, Y. Luo, and O. Mutlu. Error Characterization, Mitigation, and Recovery in Flash-Memory-Based Solid-State Drives. *Proc. IEEE*, Sep. 2017.
[2] Y. Luo, S. Ghose, Y. Cai, E. F. Haratsch, and O. Mutlu. Enabling Accurate and Practical Online Flash Channel Modeling for Modern MLC NAND Flash Memory. *IEEE JSAC*, Sep. 2016.
[3] Y. Cai, Y. Luo, E. F. Haratsch, K. Mai, and O. Mutlu. Data Retention in MLC NAND Flash Memory: Characterization, Optimization, and Recovery. In *HPCA*, 2015.
[4] Y. Luo, Y. Cai, S. Ghose, J. Choi, and O. Mutlu. WARM: Improving NAND Flash Memory Lifetime With Write-Hotness Aware Retention Management. In *MSST*, 2015.
[5] Y. Luo, S. Govindan, B. Sharma, M. Santaniello, J. Meza, A. Kansal, J. Liu, B. Khessib, K. Vaid, and O. Mutlu. Characterizing Application Memory Error Vulnerability to Optimize Datacenter Cost via Heterogeneous-Reliability Memory. In *DSN*, 2014.
[6] A. Raghavan, Y. Luo, A. Chandawalla, M. Papaefthymiou, K. P. Pipe, T. F. Wenisch, and M. MK. Martin. Computational sprinting. In *HPCA*, 2012.