

Jing Liu

Senior Researcher
System Research Group
Microsoft Research Asia

Email: jingliu3@microsoft.com
Homepage: <http://jingliu.xyz>

EDUCATION

Department of Computer Sciences, University of Wisconsin – Madison

Ph.D. in Computer Sciences

August 2024

M.S. in Computer Sciences

May 2022

Advisors: Prof. Andrea Arpaci-Dusseau & Prof. Remzi Arpaci-Dusseau

Thesis: *Scale, Performance, and Fault Tolerance in a Filesystem Semi-Microkernel*

Software Institute, Nanjing University

B.E. in Software Engineering Rank: 1/238

May 2016

Thesis: *Depth-aware layered edge for elastic RGB-D object proposal*

APPOINTMENTS

Senior Researcher, Microsoft Research Asia

September 2024 – Present

REFEREED CONFERENCE PUBLICATIONS

[1] Shawn Zhong, **Jing Liu**, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. *Revealing the Unstable Foundations of eBPF-Based Kernel Extensions*. In Proceedings of the 20th European Conference on Computer Systems (Eurosys '25), Rotterdam, Netherlands, 2025

[2] **Jing Liu**, Yifan Dai, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. *Fast, Transparent Filesystem Microkernel Recovery with Ananke*. In Proceedings of the 23rd USENIX Conference on File and Storage Technologies (FAST '25), Santa Clara, CA, 2025. (**Erik Riedel Best Paper Award**)

[3] Yifan Dai, **Jing Liu**, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. *Symbiosis: The Art of Application and Kernel Cache Cooperation*. In Proceedings of the 22th USENIX Conference on File and Storage Technologies (FAST '24), Santa Clara, 2024.

[4] **Jing Liu**, Anthony Rebello, Yifan Dai, Chenhao Ye, Sudarsun Kannan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. *Scale and Performance in a Filesystem Semi-Microkernel*. In Proceedings of the 28th ACM Symposium on Operating Systems Principles (SOSP '21), Virtual Event, Germany, 2021.

[5] Irene Zhang, Amanda Raybuck, Pratyush Patel, Kirk Olynyk, Jacob Nelson, Omar S. Navarro Leija, Ashlie Martinez, **Jing Liu**, Anna Kornfeld Simpson, Sujay Jayakar, Pedro Henrique Penna, Max Demoulin, Piali Choudhury, and Anirudh Badam. *The Demikernel Library OS Architecture for Microsecond, Kernel-Bypass Datacenter Systems*. In Proceedings of the 28th ACM Symposium on Operating Systems Principles (SOSP '21), Virtual Event, Germany, 2021.

[6] Suli Yang, **Jing Liu**, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. *Principled Scheduling Analysis for Distributed Storage Systems using Thread Architecture Models*. In Proceedings of the 13th Symposium on Operating System and Design Implementation (OSDI '18), CA, USA, 2018.

[7] Ramnath Alagappan, Aishwarya Ganesan, **Jing Liu**, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. *Fault-Tolerance, Fast and Slow: Exploiting Failure Asynchrony in Distributed Systems*. In Proceedings of the 13th Symposium on Operating System and Design Implementation (OSDI '18), CA, USA, 2018.

[8] **Jing Liu**, Tongwei Ren, Bingkun Bao and Jia Bei. *Depth-aware Layered Edge for Object Proposal*. In Proceedings of IEEE International Conference on Multimedia and Expo (ICME '16), Seattle, USA, 2016.

[9] **Jing Liu**, Tongwei Ren and Jia Bei. *Elastic Edge Boxes for Object Proposal on RGB-D images*. In Proceedings of International Conference on Multimedia Modeling (MMM '16), Miami, USA, 2016.

JOURNALS AND WORKSHOPS

- [1] **Jing Liu**, Xiangpeng Hao, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Tej Cheped. *Shadow Filesystems: Recovering from Filesystem Runtime Errors via Robust Alternative Execution* In Proceedings of the 16th ACM Workshop on Hot Topics in Storage and File Systems (HotStorage '24), Santa Clara, CA, 2024.
- [2] Suli Yang, **Jing Liu**, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. *Principled Schedulability Analysis for Distributed Storage Systems using Thread Architecture Models*. In ACM Transactions on Storage (TOS), March, 2023.
- [3] **Jing Liu**, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Sudarsun Kannan. *File Systems as Processes*. In 11th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '19), Renton, WA, 2019.
- [4] Irene Zhang, **Jing Liu**, Amanda Austin, Michael Lowell Roberts, and Anirudh Badam. *I'm Not Dead Yet! The Role of the Operating System in a Kernel-Bypass Era*. In Workshop on Hot Topics in Operating Systems (HotOS '19), Bertinoro, Italy, 2019.
- [5] **Jing Liu**, Tongwei Ren, Yuantian Wang, Sheng-Hua Zhong, Jia Bei, and Shengchao Chen. *Object proposal on RGB-D images via elastic edge boxes*. In Neurocomputing (NEUCOM), 236:134-146, May, 2017.

HONORS AND AWARDS

Erik Riedel Best Paper Award (FAST '25)	2025
Meta PhD Research Fellowship, Meta Inc.	2022 – 2024
Student Travel Grant (SOSP '17, OSDI '18, and OSDI '22)	2017, 18, & 22
CS Department Golden Brick Award, CS@UW-Madison	2022
CS Summer Research Award, UW-Madison	2017
Graduate Research Fellowship, UW-Madison	2016 – 2017
Outstanding Graduate, Nanjing University	2016
Departmental Best Undergraduate Thesis, University Highest Honor	2016
Outstanding National Undergraduate Innovation Project (Role: Lead, Grant: ~3000\$)	2016
National Encouraging Scholarship, Ministry of Education of China	2014, 2015
National Scholarship, Ministry of Education of China	2013

TEACHING EXPERIENCE

Computer Sciences Department of UW–Madison, WI <i>Instructor</i> Class: Introduction to Operating Systems.	Summer 2023
Computer Sciences Department of UW–Madison, WI <i>Teaching Assistant</i> Class: Distributed Systems. Instructor: Prof. Andrea Arpaci-Dusseau	Spring 2022, Spring 2023
Computer Sciences Department of UW–Madison, WI <i>Teaching Assistant</i> Class: Advanced Operating System. Instructor: Prof. Andrea Arpaci-Dusseau	Spring 2018
Software Institute of Nanjing University, Nanjing, China <i>Teaching Assistant, and Head Teaching Assistant</i> Class: Computer Operating System. Instructors: Prof. Bin Luo & Prof. Jidong Ge	Spring 2015, Spring 2016

INDUSTRY EXPERIENCE

Google, Madison, WI <i>Software Engineering Intern</i> Mentor: Dr. Marc De Kruijf	Summer 2019
Microsoft Research, Redmond, WA <i>Research Intern</i> Mentor: Dr. Irene Zhang	Summer 2018

SERVICE

Program Committee: SOSP '25, NSDI '26	
External Review Committee: ATC '24	
ATC/OSDI Artifact Evaluation Committee	2022
Topic (OS & Emerging Hardware) Moderator, SOSP '21 Diversity Workshop	Oct. 2021
President, W-ACM, UW Madison Chapter of ACM's Women in Computing	Aug. 2021 – Aug. 2022
FAST External Reviewer	2018

PRESENTATIONS AND INVITED TALKS

Scale and Performance in a Filesystem Semi-Microkernel.	
Invited talk at UIUC, Champaign, IL.	Oct. 2022
Invited talk at ENS de Lyon – France, virtual.	Mar. 2022
Invited talk at Samsung MSL Tech Talk, virtual.	June 2021
Talk at SOSP '21, virtual.	Oct. 2021
File Systems as Processes.	
Talk at HotStorage '19, Renton, WA.	July 2019
Elastic Edge Boxes for Object Proposal on RGB-D Images.	
Talk at MMM '16, Miami, MI.	Jan. 2016