

Jiyu Hu

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Education

University of Illinois at Urbana-Champaign
Ph.D. in Computer Science

Aug. 2023 – Present
Urbana, IL

Carnegie Mellon University
Master of Computational Data Science – School of Computer Science

Aug. 2021 – May 2023
Pittsburgh, PA

University of Illinois at Urbana-Champaign
Bachelor of Science in Computer Engineering

Aug. 2017 – May 2021
Urbana, IL

Publications

Xuhao Luo, Shreesha Bhat*, Jiyu Hu*, Ramnatthan Alagappan, and Aishwarya Ganesan. Lazylog: A new shared log abstraction for low-latency applications. In *Proceedings of the 30th Symposium on Operating Systems Principles, SOSP '24*, New York, NY, USA, 2024. Association for Computing Machinery. (*Equal contribution)

Jiyu Hu, Jack Kosaian, and K. V. Rashmi. Rethinking erasure-coding libraries in the age of optimized machine learning. In *Proceedings of the 16th ACM Workshop on Hot Topics in Storage and File Systems, HotStorage '24*, page 23–30, New York, NY, USA, 2024. Association for Computing Machinery

Rui Yang, Jiangran Wang, Jiyu Hu, Shichu Zhu, Yifei Li, and Indranil Gupta. Medley: A Membership Service for IoT Networks. *IEEE Transactions on Network and Service Management*, 19(3):2492–2505, 2022

Xueda Shen*, Jiyu Hu*, Yunqi Zhang, and Ian C. Quinn. B2-Coupon: Efficient and Non-intrusive Mobile Coupon Distribution using Dual Bloom Filter . In *2020 IEEE/ACM Symposium on Edge Computing (SEC)*, pages 358–363, 2020. (*Equal contribution)

Presentations

Rethinking Erasure Coding Libraries in the Age of Optimized Machine Learning Jul. 2024
HotStorage '24 Santa Clara, CA

B² Coupon Nov. 2020
ACM SEC (workshop talk)

Services

OSDI '24, Artifact Evaluation Committee
ATC '24, Artifact Evaluation Committee

Awards & Scholarships

SOSP '24 Best Paper Award (LazyLog)

University of Illinois at Urbana-Champaign

2024

Bradley A. Simons Memorial Scholarship

University of Illinois at Urbana-Champaign

2019

Senior Design Instructor's Award (The Best Senior Design Award)

University of Illinois at Urbana-Champaign

2021

Dean's List

University of Illinois at Urbana-Champaign

2017, 2018, 2019, 2020, 2021

Research Experience

RackFS

DASSL, University of Illinois at Urbana-Champaign

Apr. 2024 – Present

Urbana, IL

- Design a new page-caching framework for rack-scale clusters that share a fast cache-cohesive memory region.

LazyLog

DASSL, University of Illinois at Urbana-Champaign

Jan. 2024 – Jul. 2024

Urbana, IL

- Design and implement a new shared log abstraction that significantly decreases append latency from state-of-the-art shared log implementations by delaying ordering the appended log entries.
- **Best Paper Award at SOSP '24**

TVM-EC

TheSys Lab, Carnegie Mellon University

Jan. 2022 – Jul. 2024

Pittsburgh, PA

- Propose a new way of implementing high-performance erasure-coding libraries via machine learning libraries, reducing the effort to design and maintain erasure coding libraries.

ACAI AutoML

MCDS Capstone Project, Carnegie Mellon University

Jan. 2022 – May 2023

Pittsburgh, PA

- Develop ACAI AutoML framework for automatic ML pipeline tuning as part of the ACAI systems infrastructure, which aims for easing the effort to configure and deploy machine learning jobs in cloud infrastructure.

Medley

Distributed Protocols Research Group, University of Illinois at Urbana-Champaign

Jan. 2020 – Jul. 2021

Urbana, IL

- Develop and evaluate a new IoT failure detection protocol that is aware of the spatial locality of physical nodes so as to decrease the overall communication overhead in an unstable network environment.

B²-Coupon

Prof. Dong Xuan's Research Group, The Ohio State University

Nov. 2019 – Nov. 2020

Columbus, OH

- Design a better coupon distribution protocol for mobile devices.

Industry Experience

USM, Exadata, Oracle Corporation

Software Intern

May 2022 – Aug. 2022

- Worked on the kernel log aggregation and analysis framework of Oracle distributed database.

CUDA Math Library, NVIDIA Corporation

Software Intern

June 2020 – Aug. 2020

- Analyzed the floating point error propagation in cuBLAS GEMM kernel.

Skills

Languages: C, C++, Rust, x86, Go, Java, Python, SystemVerilog

Tools & frameworks: RDMA, CXL, Git, Docker, Kubernetes, CUDA, Apache TVM