Jiyu Hu

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Education

University of Illinois at Urbana-Champaign — Aug. 2023 – Present
Ph.D. in Computer Science — *Urbana, IL*

Carnegie Mellon University — Aug. 2021 – May 2023
Master of Computational Data Science – School of Computer Science — *Pittsburgh, PA*

University of Illinois at Urbana-Champaign — Aug. 2017 – May 2021
Bachelor of Science in Computer Engineering — *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 ACM SIGOPS 30th Symposium on Operating Systems Principles*, SOSP '24, page 296–312, 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*

B^2 Coupon — Nov. 2020
ACM SEC (workshop talk)

Services

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

Awards & Scholarships

Best Paper Award (LazyLog)
SOSP '24 *2024*

Senior Design Instructor's Award (The Best Senior Design Award)
University of Illinois at Urbana-Champaign *2021*

Bradley A. Simons Memorial Scholarship
University of Illinois at Urbana-Champaign *2019*

Dean's List
University of Illinois at Urbana-Champaign *2017, 2018, 2019, 2020, 2021*

Research Experience

RackFS Apr. 2024 – Present
DASSL, University of Illinois at Urbana-Champaign *Urbana, IL*
- Design a new page-caching framework for rack-scale clusters that share a fast cache-cohesive memory region.

LazyLog Jan. 2024 – Jul. 2024
DASSL, University of Illinois at Urbana-Champaign *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.

TVM-EC Jan. 2022 – Jul. 2024
TheSys Lab, Carnegie Mellon University *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 Jan. 2022 – May 2023
MCDS Capstone Project, Carnegie Mellon University *Pittsburgh, PA*
- Develope 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 Jan. 2020 – Jul. 2021
Distributed Protocols Research Group, University of Illinois at Urbana-Champaign *Urbana, IL*
- Develope 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.

B^2-Coupon Nov. 2019 – Nov. 2020
Prof. Dong Xuan's Research Group, The Ohio State University *Columbus, OH*
- Design a better coupon distribution protocol for mobile devices.

Industry Experience

USM, Exadata, Oracle Corporation May 2022 – Aug. 2022
Software Intern
- Worked on the kernel log aggregation and analysis framework of Oracle distributed database.

CUDA Math Library, NVIDIA Corporation June 2020 – Aug. 2020
Software Intern
- 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