

Jiyu Hu

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Education

University of Illinois at Urbana-Champaign <i>Ph.D. in Computer Science</i>	Aug. 2023 – Present Urbana, IL
Carnegie Mellon University <i>Master of Computational Data Science – School of Computer Science</i>	Aug. 2021 – May 2023 Pittsburgh, PA
University of Illinois at Urbana-Champaign <i>Bachelor of Science in Computer Engineering</i>	Aug. 2017 – May 2021 Urbana, IL

Research Experience

RackFS <i>DASSL, University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">Design a new page-caching framework for rack-scale clusters that share a fast cache-cohesive memory region.	Apr. 2024 – Present Urbana, IL
LazyLog <i>DASSL, University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">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.To be appeared on SOSP 24'	Jan. 2024 – Jul. 2024 Urbana, IL
TVM-EC <i>TheSys Lab, Carnegie Mellon University</i> <ul style="list-style-type: none">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.	Jan. 2022 – Jul. 2024 Pittsburgh, PA
ACAI AutoML <i>MCDS Capstone Project, Carnegie Mellon University</i> <ul style="list-style-type: none">Develop ACAL 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.	Jan. 2022 – May 2023 Pittsburgh, PA
Medley <i>Distributed Protocols Research Group, University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">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.	Jan. 2020 – Jul. 2021 Urbana, IL
B²-Coupon <i>Prof. Dong Xuan's Research Group, The Ohio State University</i> <ul style="list-style-type: none">Design a better coupon distribution protocol for mobile devices.	Nov. 2019 – Nov. 2020 Columbus, OH

Publications

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 Nov. 2022
HotStorage 24' Santa Clara, CA

B² Coupon Nov. 2020
ACM SEC (workshop talk)

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.

Awards & Scholarships

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

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

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

Skills

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

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