





Yuze Li

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EDUCATION

Virginia Tech <i>PhD in Computer Science (advisors: Ali R. Butt, Huaicheng Li)</i>	Aug 2021 - present Blacksburg, VA
Northeastern University (CN) <i>Bachelor of Engineering in Software Engineering</i>	Aug 2016 - June 2020 Shenyang, China
Boston University <i>Exchange Program in Computer Science</i>	Aug 2018 - Dec 2018 Boston, MA

RESEARCH AREAS

CXL, Memory Management, Runtime, Distributed Systems

PUBLICATIONS

Yuze Li, Shunyu Yao. [Understanding and Optimizing Serverless Workloads in CXL-Enabled Tiered Memory](#). 2023. ([pdf](#))

Ahmad Khan, **Yuze Li**, Xinran Wang, Sabaat Haroon, Haider Ali, Yue Cheng, Ali Butt, Ali Anwar. [Towards Cost-effective and Resource-aware Aggregation at Edge for Federated Learning](#). BigData '23, Nov 2023. ([pdf](#))

Yuze Li, Kevin Assogba, Abhijit Tripathy, Moiz Arif, M. Mustafa Rafique, Ali R. Butt, Dimitrios Nikolopoulos. [Towards Persistent Memory based Stateful Serverless Computing for Big Data Applications](#). 2022. ([pdf](#))

Yuze Li, Kaijun Wang, Hehui Gu. [Maven Loss with AGW-Net for Biomedical Image Segmentation](#). ICCAI '20, Apr 2020. ([pdf](#))

POSTER

Yuze Li, Shunyu Yao, Jaiaid Mobin, M. Mustafa Rafique, Dimitrios Nikolopoulos, Kirshanthan Sundararajah, Huaicheng Li, Ali R. Butt. [Towards Efficient Python Interpreter for Tiered Memory Systems](#). FAST '24, Jan 2024. ([pdf](#))

RESEARCH EXPERIENCE

Runtime-OS co-design for CXL memory system July 2023 - present

- Developing fine-grained object hotness tracking and migration for reference-count-based GC languages
- Integrating OS-based solutions to handle native executions efficiently
- Experimented application performance on static page placement based on OS-level profiling

Resource-awared aggregation analysis for federated learning Mar 2022 - Apr 2023

- Probed the current FL aggregators performance at the edge under changing demands
- Developed an adaptive FL aggregator methodology under different FL client scales, system configurations, and enabled cost and efficiency trade-off

Study of I/O interference among Serverless functions May 2022 - Dec 2022

- Used Firecracker and containerd to hold function instances, explored the I/O interference of functions creating snapshots to regular booted functions
- Experimented on asynchronous I/O for snapshot image writing

Inspecting communication efficiency in Serverless architecture for big data applications Sep 2021 - Mar 2022

- Analyzed I/O bottleneck of stateless Serverless for intermediate data communication
- Enabled stateful function execution on OpenWhisk by maintaining state information in an in-memory caching layer
- Provided access to Persistent Memory backed HDFS storage for faster I/O performance

WORK EXPERIENCE

Graduate Teaching Assistant - CS3214 Computer Systems Aug 2021 - Jan 2024

- Holding office hours for undergrad students on course related projects

Software Testing Intern - Qianxun SI Mar 2021 - Jul 2021

- Helped analyze system robustness and refactor C++ code to meet MISRA rules
- Developed useful Python tools to automatically format XML to Doc files

SKILLS

Programming Languages: C/C++, Python, Shell, Golang

Tools and Ecosystems: OpenWhisk, OpenFaaS, Git, Docker, containerd, AWS (EC2, Lambda, S3, SNS)

AWARDS

Computer Science Scholars and Pratt Fellowship (Virginia Tech) Jan 2023

USENIX Student Travel Grant: FAST '22, '23, '24