

HANFEI YU

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RESEARCH INTERESTS

My research interests lie in **Cloud Computing, Serverless Computing, Reinforcement Learning, and AI systems**. Specifically, I focus on optimizing serverless computing systems with AI-driven techniques and building efficient GPU-enabled serverless systems for AI training and serving.

EDUCATION

Stevens Institute of Technology, Hoboken, NJ, USA Doctor of Philosophy in Computer Engineering	Sep 2024 - Present
Louisiana State University, Baton Rouge, LA, USA Doctor of Philosophy in Computer Science (transferred out) <i>GPA: 3.72/4.0</i>	Sep 2021 - Aug 2024
University of Washington, Tacoma, WA, USA Master in Computer Science and Systems <i>GPA: 3.96/4.0</i>	Sep 2019 - Feb 2021
Shanghai Jiao Tong University, Shanghai, China Bachelor in Electronic Engineering	Sep 2015 - July 2019

WORK EXPERIENCE

Stevens Institute of Technology, Hoboken, NJ, USA <i>Research Assistant</i> <ul style="list-style-type: none">IntelliSys Lab	Sep 2021 - Present
Microsoft Azure Research, Redmond, WA, USA <i>Research Intern at Azure Research Systems</i> <ul style="list-style-type: none">Characterized production workloads of Azure Container Instances and Azure Kubernetes Services.Optimized resource efficiency of container orchestration by designing new solutions.	May 2024 - Aug 2024
Louisiana State University, Baton Rouge, USA <i>Research Assistant</i> <ul style="list-style-type: none">IntelliSys Lab	June 2021 - Aug 2024
Louisiana State University, Baton Rouge, USA <i>Teaching Assistant</i> <ul style="list-style-type: none">CSC 4501 Computer Networks, CSC 3501 Computer Organization & Design, CSC 3102 Advanced Data Structures and Algorithms Analysis, CSC 2259 Discrete Structures, CSC 1350 Introduction to Computer Science	Jan 2020 - June 2020
University of Washington, Tacoma, USA <i>Research Assistant</i> <ul style="list-style-type: none">Cloud and Distributed Systems (CDS) Research Lab	Sep 2020 - Jan 2021
University of Washington, Tacoma, USA <i>Teaching Assistant</i>	Jan 2020 - June 2020

- TCSS 305 Programming Practicum, TCSS 422 Operating Systems

Intel, Shanghai, China

Aug 2018 - Feb 2019

Asia-Pacific Research & Development Ltd

Software Developer Intern, UEFI-BIOS Development Group

- Contributed to the development of a UEFI Driver, which works cross-platform on Windows and Linux. The driver filters, extracts, and analyzes network packets by leveraging an open-source library called PCAP. I also helped implement and test new features of the driver.
- Wrote Shell and Python scripts to enable automatic driver installation, dependency collection, and product testing using internal tools.

PUBLICATIONS

Nitro: Boosting Distributed Reinforcement Learning with Serverless Computing

Hanfei Yu, Jacob Carter, Hao Wang, Devesh Tiwari, Jian Li, Seung-Jong Park

The International Conference on Very Large Data Bases (VLDB 2025)

Freyr+: Harvesting Idle Resources in Serverless Computing via Deep Reinforcement Learning

Hanfei Yu, Hao Wang, Jian Li, Xu Yuan, Seung-Jong Park

IEEE Transactions on Parallel and Distributed Systems (TPDS 2024)

Stellaris: Staleness-Aware Distributed Reinforcement Learning with Serverless Computing

Hanfei Yu, Hao Wang, Devesh Tiwari, Jian Li, Seung-Jong Park

The International Conference on Very Large Data Bases (SC 2024, Best Student Paper Finalist)

Cheaper and Faster: Distributed Deep Reinforcement Learning with Serverless Computing

Hanfei Yu, Jian Li, Yang Hua, Xu Yuan, Hao Wang

Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI 2024)

RainbowCake: Mitigating Cold-starts in Serverless with Layer-wise Container Caching and Sharing

Hanfei Yu, Rohan Basu Roy, Christian Fontenot, Devesh Tiwari, Jian Li, Hong Zhang, Hao Wang, Seung-Jong Park

ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2024)

Libra: Harvesting Idle Resources Safely and Timely in Serverless Clusters

Hanfei Yu, Christian Fontenot, Hao Wang, Jian Li, Xu Yuan, and Seung-Jong Park

ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC 2023)

Accelerating Serverless Computing by Harvesting Idle Resources

Hanfei Yu, Hao Wang, Jian Li, Xu Yuan, Seung-Jong Park

ACM Web Conference (WWW 2022)

FaaSRank: Learning to Schedule Functions in Serverless Platforms

Hanfei Yu, Athirai A. Irissappane, Hao Wang, Wes J. Lloyd

IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS 2021)

FaaSRank: A Reinforcement Learning Scheduler for Serverless Function-as-a-Service Platforms

Hanfei Yu

Master Thesis, University of Washington

Enhancing Observability of Serverless Computing with the Serverless Application Analytics Framework

Robert Cordingly, Navid Heydari, [Hanfei Yu](#), Varik Hoang, Zohreh Sadeghi, Wes Lloyd
ACM/SPEC International Conference on Performance Engineering (ICPE 2021)

The Serverless Application Analytics Framework: Enabling Design Trade-off Evaluation for Serverless Software

Robert Cordingly, [Hanfei Yu](#), Varik Hoang, Zohreh Sadeghi, David Foster, David Perez, Rashad Hatchett, Wes Lloyd
International Workshop on Serverless Computing (WoSC 2020)

Leveraging GPT-2 for Classifying Spam Reviews with Limited Labeled Data via Adversarial Training

Athirai A. Irissappane, [Hanfei Yu](#), Yankun Shen, Anubha Agrawal, Gray Stanton
arXiv preprint

Implications of Programming Language Selection for Serverless Data Processing Pipelines

Robert Cordingly, [Hanfei Yu](#), Varik Hoang, David Perez, David Foster, Zohreh Sadeghi, Rashad Hatchett, Wes J Lloyd
IEEE International Conference on Cloud and Big Data Computing (CBDDCom 2020)

ACADEMIC SERVICES

2024

IEEE International Conference on Parallel and Distributed Systems (ICPADS), Technical Program Committee
ACM The Web Conference (WWW), Artifact Evaluation Program Committee
Performance Evaluation (PEVA), Reviewer
IEEE Transactions on Computers (TC), Reviewer
IEEE Transactions on Mobile Computing (TMC), Reviewer
IEEE Transactions on Parallel and Distributed Systems (TPDS), Reviewer
IEEE Internet of Things Journal (IoTJ), Reviewer
IEEE Transactions on Network Science and Engineering (TNSE), Reviewer

2023

Journal of Systems Architecture (JSA), Reviewer
IEEE Transactions on Cloud Computing (TCC), Reviewer
IEEE Global Communications Conference (GLOBECOM), Reviewer
European Conference on Artificial Intelligence (ECAI), Reviewer
IEEE Transactions on Parallel and Distributed Systems (TPDS), Reviewer

2021

EAI International Conference on Ad Hoc Networks (AdHocNets), Reviewer