

Shunyu (David) Yao

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EDUCATION

Virginia Tech, Blacksburg, VA, United States

Ph.D. Student, Computer Science

August 2020 - May 2025 (Expected)

University of Virginia, Charlottesville, VA, United States

Master of Computer Science (M.CS.), Computer Science

September 2018 - August 2020

BNU - HKBU United International College, Zhuhai, China

Bachelor of Science (B.S.), Computer Science and Technology

September 2014 - June 2018

PROJECT EXPERIENCE

Automated FaaSification of Python Monolithic Workflows

Distributed Systems & Storage Laboratory, Virginia Tech

March 2021 - Current

- Created a tool that automates the process of decomposing given Python scripts into serverless functions with improved performance

CyberInfrastructure for Waterborne Antibiotic Resistance Risk Surveillance

Distributed Systems & Storage Laboratory, Virginia Tech

September 2020 - May 2021

- Enabled flexible pipeline by refactoring components into serverless microservices

Checkpoint/Restart Containerized GPU Tasks

University of Virginia (Advisor: Dr. Andrew Grimshaw)

September 2019 - May 2020

- Evaluated existing attempts to capture out-of-kernel GPU states during runtime

Partitioned Parallel Processing Spaces (PCubeS)

University of Virginia (Advisor: Dr. Andrew Grimshaw)

October 2018 - May 2019

- Translated the serial C version of LULESH hydrodynamic model into PCubeS parallel programming language to test the correctness of PCubeS type architecture

WORK EXPERIENCE

Graduate Research Assistant

Distributed Systems & Storage Laboratory, Virginia Tech

September 2021 - Current

- Project: Automated FaaSification of Python Monolithic Workflows

Research Aide Intern

Programming Models & Runtime Systems Group, Argonne National Lab

June 2021 - August 2021

- Helped developing OSHMPI, an implementation of OpenSHMEM on MPI

Graduate Teaching Assistant

Virginia Tech

September 2020 - May 2021

- Teaching Assistant for Computer Organization (CS2506)

Distributed Systems Intern

Lancium

June 2019 - August 2019

- Automated HPC resource management and task containerization using Ansible, Slurm, Docker and Singularity

PUBLICATION

Shunyu (David) Yao, Muhammad Ali Gulzar, Liqing Zhang, Ali R. Butt. 2021. Towards a Serverless Bioinformatics Cyberinfrastructure Pipeline. In Proceedings of the 1st Workshop on High Performance Serverless Computing (HiPS '21), June 25, 2021, Virtual Event, Sweden. ACM, New York, NY, USA, 8 pages. <https://doi.org/10.1145/3452413.3464787>

SKILLS

Programming Languages: Python, C/C++, Bash, Java, MPI, OpenMP, CUDA, JavaScript, Matlab

Frameworks: AWS Lambda, Ansible, Slurm, Docker, Kubernetes, Singularity, Flask

Languages: English, Mandarin (Native Speaker)