

Shawn Zimmermann

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Summary

Currently finishing a master's degree. Have research experience in designing correct high performance distributed systems. 6+ years of experience with C and modern C++, 3+ years of experience with Go, Java, Python. Plan to continue systems research.

Education

University at Buffalo

B.S AND M.S. IN COMPUTER SCIENCE AND ENGINEERING

- Specializing in Distributed Systems

Buffalo, NY USA

Jan 2021 - June 2024

Research Experience

Generalized Systems Evaluation Framework

CPI NETWORKED SYSTEMS LAB: ADVISED BY HAONAN LU AND ZHUOYUE ZHAO

- Building a general automated framework for distributed transactional systems evaluation — gRPC/Thrift/Java/Go
- Identifying pain points in the existing methods of systems evaluation
- Preliminary study on existing systems by evaluating Eiger-PORT on Emulab
- Created and gave presentations on operating systems, processes, and networking concepts to new student researchers

Buffalo, USA

April 2023 - Present

Data Provenance in Microkernel Notebooks

ONLINE DATA INTERACTIONS LAB: ADVISED BY OLIVER KENNEDY

- Implemented data provenance in microkernel notebooks and dependency tracking between notebook cells – Python/Scala
- Investigated managing uncertain data within data sets, and getting notebook kernels to share state more efficiently

Buffalo, USA

October 2022 - Present

Work Experience

Bolt Graphics, Inc.

SOFTWARE DESIGN ENGINEER (FULL-TIME)

- Developed modular software variant of initial Bolt Graphics raytracing platform — C++
- Developed custom GPU drivers for clients GPU to interact with Bolt hardware — C/Vulkan 1.2
- Delivered software implementations of the Research and Development teams investigations and surveys

Remote, USA

October 2021 - March 2023

University at Buffalo

SYSTEMS PROGRAMMING TEACHING ASSISTANT

- Created and gave supplementary lectures on the use of the UNIX command line
- Hosting lab sessions where students implemented short programs designed to show them the necessary systems programming skills

Buffalo, NY USA

August 2021- Present

Projects

Raft Distributed Consensus Algorithm

CLASS PROJECT

- Implemented the algorithm described in the "In Search of an Understandable Consensus Algorithm" research paper — Go
- Designed and implemented multiple RPC calls for communication between nodes — gRPC
- Designed a testing suite with Go's testing package to check each functionality for correctness

MakeOpenSource Operating System

CLUB PROJECT

- Assisted in developing and advising development on an educational open source operating system – C/Assembly
- Assisted the MakeOpenSource club implement common open source industry best practices

[GitHub Link](#)

October 2022 - Present

Binary Data Visualization Tool

PERSONAL PROJECT

- CLI tool to assist in debugging binary output — C
- Designed to be to 'xxd' combined with 'diff' with the addition of color for easier readability

[GitHub Link](#)