

Shawn Zimmermann

✉ zimmerm3@buffalo.edu | 🏠 <https://cse.buffalo.edu/~zimmerm3/> | 🌐 shawnzimmermann

Summary

Research experience in designing correct and high performance distributed systems. 6+ years of experience with C and modern C++, 3+ years of experience with Go, Java, Python.

Education

University at Buffalo

PHD IN COMPUTER SCIENCE

- Advised by Haonan Lu

Buffalo, USA

Starting May 2024

University at Buffalo

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

- Specializing in Distributed Systems

Buffalo, USA

Jan 2021 - May 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
- Conducted 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 - May 2024

Work Experience

Bolt Graphics, Inc.

SOFTWARE 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

October 2021 - March 2023

University at Buffalo

SYSTEMS PROGRAMMING TEACHING ASSISTANT

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

Buffalo, USA

August 2021 - May 2024

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