# Shawn **Zimmermann**

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## 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

*Buffalo, USA*

PhD in Computer Science — *Starting May 2024*

- Advised by Haonan Lu

### University at Buffalo

*Buffalo, USA*

B.S and M.S. in Computer Science and Engineering — *Jan 2021 - May 2024*

- Specializing in Distributed Systems

## Research Experience

### Generalized Systems Evaluation Framework

*Buffalo, USA*

CPI Networked Systems Lab: Advised by Haonan Lu and Zhuoyue Zhao — *April 2023 - Present*

- Building a general automated framework for distributed transactional systems evaluation — gRPC/C++/Java/Go
- Conducted study on existing systems by evaluating CockroachDB, Cassandra, Mulit-Paxos and Epaxos on Cloudlab
- Created and gave presentations on operating systems, processes, and networking concepts to new student researchers
- Submitted to OSDI '25 as first author

### Data Provenance in Microkernel Notebooks

*Buffalo, USA*

Online Data Interactions Lab: Advised by Oliver Kennedy — *October 2022 - May 2024*

- 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

## Work Experience

### Bolt Graphics, Inc.

*Remote*

Software Engineer (Full-time) — *October 2021 - March 2023*

- 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

### University at Buffalo

*Buffalo, USA*

Systems Programming Teaching Assistant — *August 2021 - May 2024*

- 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

## 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