Benjamin Michalowicz

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EDUCATION

STONY BROOK UNIVERSITY

B.S, Computer Science
May 2020 | Stony Brook, NY

M.S, Computer Science
May 2021 | Stony Brook, NY

Advisor: Dr. Barbara Chapman

THE OHIO STATE UNIVERSITY

Ph.D, Computer Science & Engineering
Aug 2021-Present

Advisor: Dr. Dhabaleswar K. Panda

GRAD COURSEWORK

STONY BROOK

Data Science Fundamentals
Principles of Programming Languages
System Security
Quantum Computing/Applications
Computer Networks
Analysis of Algorithms
Computational Geometry

THE OSU

Introduction to HPC/Deep Learning
Advanced Operating Systems
Complexity and Computability
Algorithms
Intro to Network-Based Computing

SKILLS

PROGRAMMING

C • Java • Python • Shell Scripting
•Qiskit • Fortran • C++
• SQL • LaTeX
• MIPS Assembly

OPERATING SYSTEMS

Windows • *-nix • OS X

TECHNOLOGIES

MySQL • NumPy • SciKit-Learn •
Seaborn • Git • SQL Server •
Intel Pin • LLVM, Cray, GNU Compilers

WORK EXPERIENCE

THE OHIO STATE UNIVERSITY | Research Assistant

May 2021-Present | Columbus, Ohio

- HPC research in Dr. Panda's Networking-Based Computing Laboratory, focusing on further research and development of MVAPICH2 along with research into other HPC areas, such as HPC architecture and Deep Learning.

STONY BROOK UNIVERSITY | Research Assistant

August 2020- May 2021 | Stony Brook, New York

- HPC research in Dr. Barbara Chapman's Exasca||ab, focusing on testing and benchmarking HPC clusters and architecture. Researching compiler toolchains, OpenMP behavior, and more on the A64FX processor.

STONY BROOK UNIVERSITY | Teaching Assistant

Aug 2020 - May 2021 | Stony Brook, New York

- Fall 2020: Held weekly office hours, led weekly recitations, and helped students understand material in Stony Brook University's CSE 216 course. Designed recitation questions. Spring 2021: Worked with fellow TA's and the course lecturer for CSE 320: Systems Fundamentals II

PROJECTS

MVAPICH2 | MPI Library by Network-Based Computing Lab

April 2021 - Present

- Research in HPC through the MVAPICH2 software. My main focus is on point-to-point communication and how new features for intra and inter-node communication can improve it.

FLASH | HPC Physics Simulations at scale

April 2021 - July 2021

- Worked with faculty and Grad students on the Ookami cluster with the FLASH multi-physics software. Studied its performance through various MPI libraries and compiler-level optimizations. Made attempts to vectorize for the A64FX processor.

OOKAMI/A64FX RESEARCH High-Performance Computing

August 2020-May 2021

- Research and analysis of the Ookami Cluster at Stony Brook; research of OpenMP behavior across several compiler toolchains and applications on Ookami and the Fugaku supercomputer on performance, correctness, and efficiency.

CHOR-DNS | Course Project | Co-Developer

October-December 2020 | Stony Brook, NY

- Course project in team of four: studied the Chord ring structure for DNS queries and comparing its performance to the traditional DNS hierarchy. Ran unit/integration tests on a DistAlgo setup, made configuration files for launching.

HONORS/AWARDS

INTERNATIONAL SYMPOSIUM ON COMPUTER ARCHITECTURE

Phoenix, AZ, 2019

- ISCA uArch Workshop attendee on awarded scholarship