

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

SKILLS

PROGRAMMING

Java • C • 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 NOWLAB, focusing on further research and development of MVAPICH2 along with research into other HPC areas, such as HPC architecture and Deep Learning

PARK RIDGE JR./SR. HIGH SCHOOL | DRUMLINE INSTRUCTOR, PRIVATE TEACHER

May 2021 - August 2021 | Park Ridge, NJ

- Wrote music for the PRHS Marching Band's 2021 halftime show "Park Ave. Swing." Coordinated weekly rehearsals with the drumline, collaborated with the band director, and taught drum lessons for the school's summer music program.

STONY BROOK UNIVERSITY | RESEARCH ASSISTANT

August 2020- May 2021 | Stony Brook, New York

- HPC research in Dr. Barbara Chapman's Exascale lab, 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

- Working in the NOWLAB on the MVAPICH software; profiling applications to observe and fix performance issues as they arise; currently focusing on intra-node improvement and the effect of page faults.

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, improving its performance through vectorization and SVE instructions. Testing, optimizing the Fortran-based application through numerous compiler toolchains as I transition to my PhD at The OSU.

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