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

OSU

Introduction to HPC/Deep Learning
Advanced Operating Systems
Complexity and Computability
Algorithms
Intro to Network-Based Computing
Intro to Parallel Programming
Advanced Computer Architecture
Compiler Design and Impl.

SKILLS

PROGRAMMING

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

OPERATING SYSTEMS

Windows • *-nix • OS X

TECHNOLOGIES

MPI • OpenMP • SciKit-Learn • Git • Git • TAU • LLVM, Cray, GNU Compilers

SELECTED WORK EXPERIENCE

THE OHIO STATE UNIVERSITY | Research Assistant

May 2021-Present | Columbus, Ohio

- HPC research in Dr. Panda's Networking-Based Computing Laboratory. I specialize in exploring solutions to more efficiently use SmartNICs in parallel programming models like MPI and SHMEM.

LOS ALAMOS NATIONAL LABORATORY | Student Researcher

May 2023-August 2023 | Los Alamos, NM/Remote

- Applied knowledge of HPC research and of the BlueField SmartNICs to areas such as security, encryption, and computational offload.

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 the A64FX Processor.

STONY BROOK UNIVERSITY | Undergraduate Research Assistant

May 2018 - May 2019, Dec 2019-Feb 2020 | Stony Brook, New York

- Worked with PhD students in the COMPAS lab on projects focusing on microarchitecture and cloud infrastructure.

SELECTED HONORS/AWARDS

INTERNATIONAL SYMPOSIUM ON COMPUTER ARCHITECTURE

Phoenix, AZ, 2019

- ISCA uArch Workshop attendee on awarded scholarship

SUPERCOMPUTING 2021

Remote/St. Louis, MO, 2021

- Student Volunteer Recognition for my services as a Virtual Student Volunteer for Supercomputing'21

SELECT PUBLICATIONS

CONFERENCES AND WORKSHOPS

[1] B Michalowicz, K. Suresh, H. Subramoni, M. Abduljabbar, DK Panda and S. Poole. 'Effective and Efficient Offloading Designs for One-Sided Communication to SmartNICs'.
In: 31st IEEE International Conference on High Performance Computing, Data, and Analytics.
Bengaluru, India, Dec. 2024.

[2] K. Suresh, B. Michalowicz, N. Contini, B. Ramesh, M. Abduljabbar, A. Shafi, H. Subramoni and DK Panda.
'Using BlueField-3 SmartNICs to Offload Vector Operations in Krylov Subspace Methods'.
In: 31st IEEE International Conference on High Performance Computing, Data, and Analytics.
Bengaluru, India, Dec. 2024.

[3] B. Michalowicz, K. Suresh, H. Subramoni, D. Panda and S. Poole.
'DPU-Bench: A Micro-Benchmark Suite to Measure Offload Efficiency Of SmartNICs'.
In: Practice and Experience in Advanced Research Computing 2023 (PEARC'23).
Portland, Oregon, July 2023.