Omri Mor

Computer Science Ph.D. Student

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Profile

I am a second-year computer science Ph.D. student at the University of Illinois at Urbana–Champaign. My research interests include high-performance computing and networking, and I enjoy using and contributing to free and open-source software in my spare time.

Education

2017–Current **Ph.D. in Computer Science**, *University of Illinois at Urbana–Champaign*, Urbana & Champaign, IL, *3.67* GPA.

2013–2017 **BS in Computer Science & Minor in Mathematics Summa Cum Laude**, *Barrett, the Honors College at Arizona State University*, Tempe, AZ, *4.02* major GPA, *3.82* cumulative GPA.

Experience

Vocational

08/2017–Current **Graduate Research Assistant**, *Snir Lab*, Urbana, IL.
Researching problems in parallel and high-performance computing with Dr. Marc Snir. Currently working on a low-level communication interface that is more suitable to task-based programming frameworks such as PaRSEC and Legion. Previous projects include exploring the possibility of a DPDK provider for the OpenFabrics Interfaces framework.

08/2018–12/2018 **Graduate Teaching Assistant**, *University of Illinois at Urbana–Champaign*, Urbana & Champaign, IL.
Assisting Dr. Marc Snir in teaching the undergraduate parallel programming class for science and engineering students. Responsibilities included weekly office hours, occasional lectures, and proctoring exams.

09/2016–05/2017 **REU Research Aid**, *VISA Research Lab at ASU*, Tempe, AZ.
Assisting Dr. Ming Zhao with research at the Research Laboratory for Virtualized Infrastructure, Systems, and Applications (VISA) at Arizona State University. Primary work was on a userspace filesystem tracing and replaying tool for processes running on the Linux kernel.

Summer 2016 **Computation Student Intern**, *Lawrence Livermore National Laboratory*, Livermore, CA.
Integrating the Multiphase Flow with Interphase eXchanges (MFIX) software suite with the Problem Solving environment for Uncertainty Analysis and Design Exploration (PSUADE) toolkit in a Python-based graphical user interface to allow better fluid dynamics simulation in research and industry.

10/2013–11/2015 **Student Administration Assistant**, *ASU Research Computing*, Tempe, AZ.
- Managing three high performance computing clusters at Arizona State University
- Creating user accounts
- Installing software for users
- Installing new computing equipment
- Other miscellaneous customer service

Educational

01/2016–12/2016 **Lead Developer**, *ASU Capstone Project*, Tempe, AZ.
Lead developer of the capstone project *Analysis and Visualization Tools for X-ray Free Electron Laser Science*. Working with Dr. Richard Kirian and Dr. Nadia Zatsepin from the physics department at Arizona State University on improving tools for XFEL data analysis and visualization from the Cheetah and CrystFEL software suites.

Open-Source Software

Stockfish	Add support for MPI-based parallelization (*out of tree*).
Charm++	macOS build fixes, new interface suggestions.
DPDK	Python 3 compatibility fix.
Samba	Modernize Avahi support and advertise Time Machine compatibility.
fio	Fix Android support, tracking down a memory alignment bug.
Open MPI	Add missing definition of MPI 3.1 constant.
CrystFEL	`make_pixelmap`: Add HDF5 datasets for resolution and camera offset

Awards

2017 **Saburo Muroga Endowed Fellowship**, *Department of Computer Science, University of Illinois at Urbana–Champaign*.
Fellowship honoring Dr. Saburo Muroga, awarded to outstanding graduate students in computer science

03/2016 **1st Place**, *ASU Programming Competition by Women in Computer Science*, Tempe, AZ.

11/2015 **2nd Place Benchmark & 6th Place Overall**, *Student Cluster Competition at SC15*, Austin, TX.
2nd of 9 teams in the benchmark portion and 6th overall in the Student Cluster Competition at the SC15 conference in Austin, TX as part of the Arizona Tri-University Team, *Desert Heat*

2013–2017 **New American University Scholarship, President's Award**, *Arizona State University*.

Fall 2013–Spring 2017 **Dean's List**, *Ira. A. Fulton Schools of Engineering at Arizona State University*.

Publications

[1] Riccardo Paccagnella et al. "Tamper-evident Logging and Auditing on Commodity Operating Systems". In: 2018 Midwest Security Workshop (University of Illinois at Urbana–Champaign). Urbana, IL, 2018. Poster.

[2] Omri Mor, Ming Zhao, and Ziming Zhao. "Filesystem I/O Tracing and Replaying". Honors Thesis. Barrett, the Honors College at Arizona State University, 2017. DOI: 2286/R.I.43534.

[3] S. Chen et al. "MFIX-DEM Phi: Performance and Capability Improvements Towards Industrial Grade Open-Source DEM Simulation Framework with Integrated and Easy-To-Use Uncertainty Quantification". In: 2016 Multiphase Flow Science Workshop. Morgantown, WV, 2016. Poster.

[4] Omri Mor, Charles H. Tong, and Aytekin Gel. "Design of an uncertainty quantification workflow for MFIX". In: Student Poster Symposium (Lawrence Livermore National Laboratory). Livermore, CA, 2016. Poster.

Conferences

11/2017 **SC17**, Denver, CO.
SC, the International Conference for High Performance Computing, Networking, Storage, and Analysis, 2017

11/2015 **SC15**, Austin, TX.
SC, the International Conference for High Performance Computing, Networking, Storage, and Analysis, 2015

Languages

English	Native proficiency	
Hebrew	Native proficiency	*Fluent speaking*
German	Intermediate fluency	*4 semesters at ASU*
Spanish	Intermediate fluency	*Accelerated high school program*

Technical Skills

Programming Languages

- C
- C++
- Java
- Swift
- Objective-C
- Ruby
- Python

Miscellaneous

- Reading and understanding the structure of large and complex codebases, such as Linux, Samba, LLVM, Open MPI, and MPICH.
- GNU/Linux operating systems, including RHEL
- Software development and Version Control (e.g. *git*), including GitHub, GitLab, and Bitbucket
- High-Performance Computing (HPC): OpenMP and MPI application programming
- Kernel-level development and Linux kernel modules
- Intel Software Guard Extensions (SGX) and enclave programming

Interests

- High-Performance Computing
- Scientific Computing
- Computer Architecture
- Free and Open-Source Software
- Parallel Computing
- Cryptography & Security
- Operating Systems