Alexandra Porter

EDUCATION

STANFORD UNIVERSITY
PHD IN COMPUTER SCIENCE
2017 - Present | Stanford, CA

ARIZONA STATE UNIVERSITY
BS IN COMPUTER SCIENCE, BS IN MATHEMATICS
Aug 2013 - May 2017 | Tempe, AZ
Minor: Music performance
Honors Program, Dean's List (All Semesters)
Cum. GPA: 4.0 / 4.0

AWARDS AND SCHOLARSHIPS

2017	NSF Graduate Research Fellowship
2017	Charles Wexler Mathematics Prize for Outstanding Senior Undergraduate Mathematics Student at Arizona State University
2016	Computing Research Association Outstanding Undergraduate Researcher Award Finalist
2015-2016	NSF Research Experience for Undergraduates
2013-2017	Arizona State University New American University Scholarship
	Lockheed Martin Corporate National Merit Scholarship

RESEARCH AND WORK EXPERIENCE

ANOMALY DETECTION IN TEMPORAL NETWORKS | GRADUATE RESEARCH ASSISTANT
April 2018 – Present | Stanford, CA
Designed and implemented method for identifying significant patterns in temporal network data.
Advisor: Jure Leskovec, Associate Professor of Computer Science and of Electrical Engineering, Stanford University

ERROR CORRECTING CODES FOR DISTRIBUTED STORAGE | GRADUATE RESEARCH ASSISTANT
Sept 2017 – Present | Stanford, CA
Designed and analyzed error correcting codes to improve the reliability of distributed storage systems.
Advisor: Mary Wootters, Assistant Professor of Computer Science and of Electrical Engineering, Stanford University

SANDIA NATIONAL LABORATORIES | RESEARCH & DEVELOPMENT UNDERGRADUATE INTERN
May 2015 – Aug 2017 | Albuquerque, NM
Discrete Mathematics & Optimization Department | May 2016 - Aug 2017
Developed, analyzed, and implemented data streaming and data storage algorithms.
Verification & Validation Department | May 2015- May 2016
Wrote tools for finite element analysis uncertainty quantification and integrated them into a large software framework.

SELF-ORGANIZING PARTICLE SYSTEMS | UNDERGRADUATE RESEARCH ASSISTANT
Jan 2015 – May 2017 | Arizona State University, Tempe, AZ
Designed, implemented, and tested algorithms for particle behavior to extend capabilities of existing simulator.
Advisor: Andrea Richa, Professor, School of Computing, Informatics, & Decision Systems Engineering, Arizona State University

INTERNET OF THINGS CO-SIMULATION | UNDERGRADUATE RESEARCH ASSISTANT
Oct 2015 – May 2016 | Arizona State University, Tempe, AZ
Designed, programmed, and tested simulations of a self-navigating wheelchair combining a commercial robotics simulation and an open source network simulation environment.
Advisor: Umit Ogras, Assistant Professor, School of Electrical, Computer, and Energy Engineering, Arizona State University

PERSONAL NUTRITION VISUALIZATION | UNDERGRADUATE RESEARCH ASSISTANT
Jan 2014 – Dec 2014 | Arizona State University, Tempe, AZ
Designed, developed, and tested personal nutrition visualization app for Android platform. Included website data mining, MATLAB data analysis, and user data system design.
Advisor: Ross Maciejewski, Assistant Professor, School of Computing, Informatics, & Decision Systems Engineering, Arizona State University

PUBLICATIONS AND PRESENTATIONS

2018 Alexandra Porter, Shashwat Silas, and Mary Wootters. Load-balanced fractional repetition codes. In 2018 IEEE International Symposium on Information Theory (ISIT), pages 2072–2076, June 2018

Alexandra Porter and Andrea Richa. Collaborative computation in self-organizing particle systems. In International Conference on Unconventional Computation and Natural Computation, pages 188–203. Springer, 2018

2016 Jon Berry and Alexandra Porter. Stateful streaming in distributed memory supercomputers. Chesapeake Large-Scale Analytics Conference, 2016

Alexandra Porter, Md Muztoba, and Umit Ogras. Human-machine communication for assistive iot technologies. CODES+ISSS Special Session Presentation, 2016

Zahra Derakhshandeh, Robert Gmyr, Alexandra Porter, Andréa W. Richa, Christian Scheideler, and Thim Strothmann. On the runtime of universal coating for programmable matter. In DNA Computing and Molecular Programming - 22nd International Conference, DNA 22, Munich, Germany, September 4-8, 2016, Proceedings, pages 148–164, 2016

2015 Joshua Daymude, Miles Laff, Zahra Derakshandeh, Robert Gmyr, Alexandra Porter, and Andrea W. Richa. Universal coating for programmable matter. Poster presentation at the Biological Distributed Algorithms Workshop (BDA), 2015

Corrie M. Whisner, Alexandra Porter, Nicholas Pecor, and Ross Maciejewski. A survey of personal nutrition in mHealth apps. Personal Visualization: Exploring Data in Everyday Life – IEEE VIS Workshop, 2015

TEACHING EXPERIENCE

Undergraduate Teaching Assistant
Jan 2017 - May 2017 | Arizona State University, Tempe, AZ
Held office hours and assisted with review sessions as UGTA for the course Design and Analysis of Algorithms.