

Alexandra Porter

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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 Derakhshandeh, 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.