

Jace D. Robinson**Curriculum Vitae****Current Location:** Dayton, Ohio, USA**Personal Webpage:** <http://jacerobinson8.github.io/>**Email:** robinson.329@wright.edu**Personal Statement**

I am a graduate researcher fascinated with the notion of mapping mathematical and statistical ideas to real data with impact. Through several theoretical and applied research experiences, I have explored a range of topics from mathematical and probabilistic modeling, algorithmic development, pure mathematics, high performance programming, and software engineering. These experiences have cemented my desire to pursue a career researching problems at the intersection of data and mathematics. I intend to pursue a PhD in machine learning following graduation.

Education

Wright State University	Dayton, OH, USA
<i>M.S. in Computer Science</i> (GPA: 4.0)	(Expected) December 2017
Advisor: Dr. Derek Doran	
Thesis: "Seasonal Dynamic Stochastic Block Model" (in progress)	
Focus: Probabilistic Modeling, Machine Learning, Network Science"	
<i>B.S. in Mathematics with University Honors and summa cum laide</i> (GPA: 3.98)	May 2016
<i>B.S. in Computer Science with University Honors and summa cum laide</i>	May 2016
Advisor: Dr. K.T. Arasu	
Thesis: "Investigation of Algebraic Combinatorics through Difference Sets"	
Focus: Computational Mathematics, Combinatorics, Applied Mathematics	

Honors and Awards

1. Summa cum laide for B.S. in Mathematics and B.S. in Computer Science	2016
2. University Honors for B.S. in Mathematics and B.S. in Computer Science	2016
3. CECS Senior Design Showcase Nominee	2016
4. Outstanding Student Award	2016
5. Dean's List	(all semesters) 2012-2016
6. Dean's Circle Invitation	2013
7. Greeneview High School Valedictorian	2012

Scholarships

8. Barry Goldwater Scholarship Nominee	2015
9. Reynolds & Reynolds Scholarship	\$5,000 2014
10. Krishan K Gorowara Memorial Scholarship	\$1,000 2014
11. Science and Mathematics Scholarship	\$500 2014
12. Valedictorian/Salutatorian Scholarship	(Full In-State Tuition) \$32,000 2012

13. Honors Competitive Scholarship \$10,000 2012

Research Experience

Wright State University, Dayton, OH, USA

Graduate Research Assistant, Kno.e.sis Research Center

August 2016-Present

Advisor: Dr. Derek Doran

- Creating a novel random graph model for dynamic networks built on stochastic block model and state-space model with applied problem of anomaly detection on macro movement in massive geospaces
- Knowledge of bayesian statistics, kalman filters, network models, artificial neural networks, general linear models, markov models, expectation maximization, nonlinear optimization and markov chain monte carlo
- Assisted advisor in writing grant proposal based on thesis project for Bloomberg Data Science Grant

Undergraduate Research Assistant, Department of Mathematics and Statistics

2014-2015

Advisor: Dr. K.T. Arasu

- Created combinatorial arguments and computational software to discover new *almost difference sets* and *almost difference families*
- Assisted advisor in refereeing two potential journal publications

Air Force Institute of Technology, Wright Patterson Air Force Base, USA

Federal Contractor, Oak Ridge Institute for Science and Education

2015-2016

Advisor: Dr. Andrew Terzuoli

- Developed original parallel iterative closest point algorithm using k-d trees and Delaunay triangulation on GPU to align two point clouds in real-time (C, C++, CUDA)
- Algorithmic improvements to Gauss-Newton nonlinear optimization algorithm applied on noisy line-of-sight sensor measurements (MATLAB)
- Modeled web traffic using mixture model of Markov Chains (MATLAB)
- Additional contributions to projects of designing website to store and share 3d models, simulating radiation patterns of antennas in CST and SATCOM software, and modeling atmospheric effects on high frequency communication signals
- Communicated in interdisciplinary environment of physicists, mathematicians, electrical engineers, and computer scientists at undergraduate and graduate level
- Presented monthly extended technical presentations to project sponsors

Publications

1. **Robinson J.**, Piekenbrock M., Burchett L., Nykl S., Woolley B., Terzuoli A., "Parallelized Iterative Closest Point for Autonomous Aerial Refueling", Proceedings of Advances in Visual Computing (Lecture Notes in Computer Science 10072), 2016.

2. Burchett L., **Robinson J.**, Piekenbrock M., Nykl S., Woolley B., and Terzuoli T., “Automated aerial refueling: Parallelized 3d iterative closest point”, Proceedings in IEEE (International). Conference in Aerospace & Electronics, 2016.
3. Levy D., Roos J., **Robinson J.**, Carpenter W., Martin R., Taylor, C., Sugrue J., Terzuoli A., “Non Linear Optimization Applied to Angle-Of-Arrival Satellite Based Geo-Localization for Biased and Time-Drifting Sensors”, In International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences 41, 2016.
4. **Robinson J.**, “Investigation of Algebraic Combinatorics through Difference Sets”, Undergraduate Thesis, Wright State University, 2016.
5. Phillips B., **Robinson J.**, “Some New Almost Difference Sets Via Finite Fields”, *ACM Communications in Computer Algebra* 49, 2015.

Invited Conference Presentations

1. “Some New Almost Difference Sets Via Finite Fields”, Wright State, Celebration of Research, 2015.
2. “New Almost Difference Families via Cyclotomy and Block Designs”, Miami University, Pi Mu Epsilon Student Conference, 2015.
3. “Some New Almost Difference Sets Via Finite Fields”, University of Dayton, Undergraduate Mathematics Day, 2015.
4. “Some New Almost Difference Sets Via Finite Fields”, Fordham University, Applied Computer Algebra Conference, 2014.

Teaching Experience

Wright State University, Dayton, OH, USA

Recitation Instructor, Department of Computer Science and Engineering 2013-2014

Courses: Discrete Mathematics, Discrete Structures, Intro to Discrete Structures

- Designed 55 minute reviews of the main lecture to present in recitation along with providing feedback on homework and exams

Undergraduate Teaching Assistant, Department of Mathematics and Statistics 2013

Courses: Calculus I-II, College Algebra

- Answered student questions one-on-one and provided feedback on homework

Highlight of Class Projects

1. Detected and presented significant differences in features between public and private universities through classification problem on U.S. College Scorecard dataset using Bayesian logistic regression (R)
2. Developed software to data mine Twitter, identify dangerous incidents by natural language processing, cluster using geolocations, and visualize results (Java, R)

3. Data mined Twitter and created visualizations of popular political candidates and news stories surrounding the 2016 presidential primary election (Python, Tableau, HTML)

Technology Proficiencies

C	C++	Python	R
CUDA	Java	MATLAB	HTML
Tableau			

Leadership and Service Activities

Chair of College of Science and Mathematics Dean's Circle 2013-2015

Advisors: Assistant Dean Jacqueline Neal and Dean Yi Li

- Led a group of 14 students representing the 8 departments of the college
- Regularly spoke to crowds of prospective Wright State students and families at open house events
- Promoted involvement in scientific community through fun science seminars of *Fun with Fire and Explosions* and *The Science of Beer*
- Assisted faculty by organizing informational seminar on new *Undergraduate Research & Experiential Learning* program

Volunteer at Wright State Friendship Food Pantry 2012-2013

Advisor: Felix E. Torres

- Aided in providing emergency food and referrals to students in times of need, helping them to stay in school and meet their educational goals.

Other

U.S. Citizen