

# Jace D. Robinson

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2920 Kant Place, Beavercreek, OH 45431

**Cellular:** (937) 705-5210

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February 23rd, 2016

Applied Optimization

714 East Monument Avenue, Suite 204

Dayton, Ohio 45402

Dear Applied Optimization:

After researching the Applied Mathematician Intern position, I have determined I am an excellent candidate based upon my experience, education, and potential. I am an experienced researcher of both applied mathematics and computer science currently working as a Federal Contractor at the Air Force Institute of Technology (AFIT) at Wright Patterson Air Force Base. I am seeking a position that will be a challenging and educational place to start my career while attending graduate school that can transition into a full-time position.

Through my position at AFIT, I have gained valuable experience working in an interdisciplinary engineering environment. My primary project has been to enhance an existing nonlinear optimization algorithm on line-of-sight measurements in MATLAB. Part of the project involved simulating artificial data as realistically as possible. This mathematical modeling problem allowed me to face and overcome the challenges of converting abstract mathematical algorithms to real world applications. My secondary project has been to develop a novel parallel algorithm to align two detailed point clouds in real-time on the graphics processing unit using C, C++, and CUDA languages. This project allowed me to solidify my skills of quickly learning and programming in an unfamiliar CUDA programming language. I would be joining your team with extensive problem solving experience working on current Air Force challenges.

In addition to my technical experience, I have developed excellent leadership and communication skills. I have worked in various professional group environments such as my team at AFIT and the Dean's Student Advisory Board for the College of Science and Mathematics. All of my projects at AFIT have required constant collaboration to contribute knowledge from our different technical backgrounds. I also have learned to effectively present my work to both technical and nontechnical audience members. As Chair of the Dean's Student Advisory Board, I organized and led the biweekly meetings. This position taught me how to properly structure group meetings to allow for productive communication. I am extremely confident I can integrate seamlessly into the team environment at Applied Optimization.

My education fully prepares me to excel as a professional Applied Mathematician. I have a varied educational background with two full undergraduate degrees in Applied Mathematics and Computer Science. These degrees have equipped me to understand and apply difficult mathematical concepts to today's technical challenges. My education has given me a deep understanding of both the hard and soft skills required to be a successful Applied Mathematician for Applied Optimization. Beginning in the fall semester of 2016, I will be pursuing a Master of Science degree in Computer Science at Wright State University. I have always enjoyed the educational environment and will be considering pursuing a PhD following the master's work to further my career.

After reviewing the job requirements, I am fully confident I am an excellent candidate for the Applied Mathematician Intern position and I look forward to discussing this opportunity with you further. Please let me know when you would be available to discuss the value I can add to the team at Applied Optimization.

Sincerely,

Jace D. Robinson

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## Summary

Well-rounded researcher of applied mathematics and computer science seeking an internship to grow professionally while attending graduate school.

## Education

**Overall GPA:** 3.98 (4.0 scale)

B.S. in Mathematics

May 2016

B.S. in Computer Science

May 2016

Wright State University

Dayton, OH

Concentration: Applied Mathematics

**Related Coursework (Math):** Calculus Series, Applied Statistics Series, Differential Equations, Physics Series, Linear Algebra, Numerical Methods, Optimization Techniques, Analytical Mechanics

**Related Coursework (CS):** Data Structures, Operating Systems Overview and Internals, Computational Data Tools, Machine Learning, Graph Theory, Software Engineering

**Senior Project:** Developing a software program to data mine social media to infer, cluster, and analyze key information regarding incidents within a specified geolocation.

## Experience

Federal Contractor, Oak Ridge Institute for Science and Education (ORISE)

May 2015 - Present

Air Force Institute of Technology, Wright Patterson Air Force Base

- Improving nonlinear optimization algorithm of line-of-sight sensor measurements in MATLAB
- Developing original parallel iterative closest point algorithm on GPU using C, C++ and CUDA languages to align two detailed point clouds in real-time
- Working and collaborating in an interdisciplinary team environment
- Regularly provide presentations to sponsors
- Frequently research and understand unfamiliar technical subjects

Chair of Dean's Student Advisory Board

May 2014 - May 2015

College of Science and Mathematics, Wright State University

- Led group of fourteen students representing the eight departments of the college
- Organized and ran biweekly meetings
- Created events with faculty and staff to improve student experience

Research Assistant

May 2014 - September 2014

Department of Mathematics, Wright State University

- Researched in field of algebraic combinatorics under Dr. K.T. Arasu
- Developed and programmed algorithms to discover mathematical sets
- Presented work at Applied Computer Algebra Conference at Fordham University in New York City

## Skills

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|--------|----------|-----------|
| • C++  | • MATLAB | • Java    |
| • C    | • R      | • Linux   |
| • CUDA | • Python | • Windows |

## Awards and Honors

- High School Valedictorian Class of 2012
- Dean's List - All Semesters Fall 2012 - Present
- Valedictorian/Salutatorian Full Tuition Scholarship