

# Zachary Sarver

## Resume

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🌐 <http://zacksarver.rocks>



### Education

- 2010–2016 **Doctor of Philosophy in Mathematics**, *Auburn University*, Alabama.  
Expected graduation May 2016
- 2005–2009 **Bachelor of Science in Mathematics and Computer Science**, *Jacksonville State University*, Alabama, Magna cum laude.  
Distinguished Graduate in Mathematics, Special Honors in Computer Science

### Experience

- 2010–Present **Graduate Teaching Assistant**, *Auburn University*, Alabama.
- Oversaw computer-based pre-calculus classes.
  - Worked as a tutor for Pre-Calculus, Calculus I, Calculus II, and Calculus III.
  - Served as the instructor of record for six courses, several more than once: Pre-Calculus, Calculus with Business Applications I, Calculus I, Calculus II, Calculus III, Linear Algebra
    - Wrote lectures, tests, assignments, and finals for every course taught.
    - Worked with several students so that they could receive honors credit for an otherwise non-honors class.
    - Excellent student evaluations. Detailed records available upon request.
    - Taught using methods from Moore-style teaching and inquiry based learning
- 2008–2009 **Programmer**, *Envizons*, Anniston, Alabama.  
Worked on a custom user interface and associated daemons and helper programs in C, C++, and Ruby. Envizons was a startup based in Anniston, AL that produced Linux-based set-top boxes for enjoying games and media on your TV.
- 2007–2008 **Undergraduate Research Assistant**, *Jacksonville State University*, Jacksonville, Alabama.  
Aided Dr. Monica Trifas and Dr. Ming Yang in their research in multi-reference frame video encoding. Reviewed code and implemented functions in C.
- 2006–2008 **Tutor**, *ACE Tutoring Center*, Jacksonville, Alabama.  
The Academic Center for Excellence is a Jacksonville State University program for providing free tutoring to JSU undergrads. Tutored undergraduate mathematics and computer science students primarily, as well as the occasional English Composition student.

### Achievements

- 2014 **Winner, City of Auburn Municipal Hackathon.**  
For “[Is Toomer’s Corner Being Rolled?](#)”, a webapp that uses image recognition techniques on still images periodically captured from a municipal webcam to determine if Toomer’s Corner is being rolled, an Auburn football victory tradition.
- 2009 Graduated Jacksonville State University magna cum laude with honors

- 2005 Full scholarship to Jacksonville State University  
2005 Valedictorian, Sacred Heart Catholic School, Anniston, Alabama

## Computer skills

- Basic PERL, GO, OBJECTIVE-C, MOS 6502 ASSEMBLY, ZILOG Z80 ASSEMBLY, ANGULARJS, GAP
- Intermediate C++, RUBY, JAVA, RUST, HTML/CSS, L<sup>A</sup>T<sub>E</sub>X, Microsoft Windows, POSIX libraries, SDL
- Advanced C, PYTHON, HASKELL, Linux

## Communication Skills

- 2010-2016 Instructor at Auburn University
- 2015 Gave talk on my research at the 5th International Conference on Matrix Analysis and Applications at Nova Southeastern University
- 2015 Gave talk on the category of graphs at the Southern Combinatorics, Graphy Theory, and Game Theory Mini-conference at Lamar University
- 2015 My paper *An Extension of Wang-Gong Monotonicity Result to Semisimple Lie Groups* accepted for publication in *Special Matrices*
- 2015 Gave College of Science and Mathematics interdisciplinary colloquium talk
- 2015 Preliminary oral defense of my research
- 2015 [Impromptu five-minute talk](#) at Legacy of R.L. Moore conference in Austin, TX
- 2014 Gave talk at the Graduate Student Combinatorics Conference
- 2014 Gave talks in Auburn's graduate student and linear algebra seminars

## Interests

- Programming languages
- Video games
- Science fiction novels
- Cats
- Puzzles
- Multilinear algebra
- Sega
- Music
- Constructed spoken languages
- Puzzle design