

Zachary Sarver

Resume

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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

Research Interests

- Matrix theory
- Linear and multilinear algebra
- Computer vision
- Category theory
- Functional reactive programming

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
- Summer 2009 **Undergraduate Research Student**, *Utah State University*, Logan, Utah.
Participated in a computer vision research program studying image classification via support vector machines.
- 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, \LaTeX , Microsoft Windows, POSIX libraries, SDL

Advanced C, PYTHON, HASKELL, Linux

Communication Skills

2010–2016 Instructor at Auburn University

2015 My paper *An Extension of Wang-Gong Monotonicity Result to Semisimple Lie Groups* accepted for publication in *Special Matrices*

2015 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 Talk at the Graduate Student Combinatorics Conference

2014 Talks in Auburn’s graduate student and linear algebra seminars

Interests

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| - Video games | - Sega |
| - Science fiction novels | - Music |
| - Cats | - Constructed languages |
| - Puzzles | - Puzzle design |