

Elijah Soria

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EDUCATION

Saint Mary's College of California

Fall 2014- Dec. 2016

Pursuing B.S. in Mathematics & Computer Science

Senior Thesis: *Matrix Groups and their Lie Algebras*, Spring 2016

Overall GPA: 3.901

Iowa State University

Fall 2013- Spring 2014

Sophomore classification, Pursued B.S. in Mathematics & Computer Science

Overall GPA: 3.88

ACADEMIC WORK EXPERIENCE

University of Maryland

June 2016- Aug. 2016

Undergraduate Researcher of Computer Science

College Park, MD

- Researcher of computer science as a part of the NSF-funded REU program entitled “Combinatorics and Algorithms for Real Problems” under the direction of Dr. Jonathan Katz. The objective of the research program was to learn, implement, attack, and develop new methods for improving a cryptographic method known as the Algebraic Eraser, whilst gaining experience working in a professional academic setting.

Saint Mary's College of California

June 2015- Aug. 2015

Undergraduate Researcher of Mathematics

Moraga, CA

- Researched generating matrices for certain recursive sequences as a part of the Saint Mary's School of Science summer research program of 2015 under the direction of Dr. Kristen Beck. The resulting paper entitled “Some properties of generalized k -Pell sequences”, which can be found at <http://arxiv.org/abs/1508.03035>, has been published in the Pi Mu Epsilon Journal of Mathematics, Vol. 14, No. 3, pp. 205-217, 2015.

Saint Mary's College of California

Jan. 2015- May 2015, Aug. 2016 - Current

Tutorial Leader

Moraga, CA

- Supplementing material taught in class to a small group of students, constructing different teaching methods to display material in multiple ways that will help students thoroughly understand the mathematical concepts behind each problem, and administering and grading of weekly quizzes and homework for two courses: Pre-calculus and Intermediate Algebra. Tutorial is a required session for those enrolled in each course, with tutorial coursework and attendance going towards the students' overall class grade.

Saint Mary's College of California

Jan. 2016- May 2016

Seminar Student Co-Leader

Moraga, CA

- Selected as a student co-leader in the Saint Mary's College Seminar Department. Collaborated with a tenured professor to co-facilitate discussions on different historical texts for third year undergraduate students, which included coming up with daily outlines for discussion goals, discuss the effectiveness of certain facilitation techniques, and evaluate students participation within discussion.

My Neighborhood Tutor
Mathematics Tutor

Aug. 2015- July 2016
Lafayette, CA

- Tutored multiple levels of mathematics from high school through college in a one-on-one format, ensuring that the tutee has a well-rounded understanding of the material taught in class, delivered mathematical concepts in multiple aspects, depending on the tutee's learning habits, and developed a culture of learning with tutee's.

Saint Mary's College of California
Calculus I Course Grader

Sept. 2014- Dec. 2014
Moraga, CA

- Graded students' weekly homework, completed an answer sheet for individual assignments, worked with the course professor to ensure consistent grading that fulfills the standards of the assignment and course requirements.

Iowa State University
Calculus II Tutor

Jan. 2014- May 2014
Ames, IA

- Taught and supplemented material taught in class to a small group of students, ensured that tutee's needs are filled and questions are answered correctly, formulated alternative teaching methods that enables students to understand the information efficiently, and created a lesson plan for each session.

PUBLICATIONS

Some properties of generalized k -Pell sequences

Pi Mu Epsilon Journal of Mathematics, Vol. 14, No. 3, pp. 205-217, 2015.

- The purpose of this paper is twofold; (1) to develop several identities for the Generalized k -Pell sequence (including those of Binet, Catalan, Cassini, and d'Ocagne), and (2) to study applications of tridiagonal generating matrices for the k -Pell and Generalized k -Pell sequences.
ArXiv Link: <http://arxiv.org/abs/1508.03035>

PRESENTATIONS

– Some properties of generalized k -Pell sequences
Joint Mathematics Meeting Undergraduate Poster Session

Jan. 2016
Seattle, WA

– Some properties of generalized k -Pell sequences
MAA Golden Section Poster Session

Feb. 2016
University of California – Davis

UNDERGRADUATE COURSEWORK

Topology
Algebraic Coding Theory
Analysis of Algorithms
Linear Algebra
Advanced Calculus
Abstract Algebra

Programming I & II
Computation and Complexity
Intro to Upper Division Math
Combinatorics & Discrete Math
Calculus I, II, & III
Intro to Probability & Statistics

TECHNICAL/INDUSTRY WORK EXPERIENCE

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Data Analyst Intern

Aug. 2016- Current
Berkeley, CA

- Independent researcher performing data analytics on user data, updating, analyzing, and cleaning SQL datasets, and writing reports and presentations on findings that will be used to pitch the company's products to potential investors.

Lindsay Wildlife Experience*iOS App Developer*

June 2015- Aug. 2015

Walnut Creek, CA

- Developing and editing the iOS application for the Lindsay Wildlife Experience, which included re-designing the user interface, implementing more efficient data storage methods, and working under the guidelines of iOS 8 to ensure backwards compatibility. The Lindsay Wildlife Experience app is written in Objective-C and is available on the iOS App Store.

My Neighborhood Tutor*Business Analyst*

Aug. 2015- July 2016

Lafayette, CA

- Researched revenue streams from different sources of advertisement, analyzed trends in sales from different markets using multiple data sources, and presented data and findings in a formal and succinct manner including technical reports and through the mapping software BatchGeo. I used Excel extensively throughout this project.

Musical Offering Cafe*Food Service Worker & Cashier*

June 2014- Present

Berkeley, CA

- Serviced the customers in a professional manner, prepared food and drink items, organized and restocked inventory, provided a safe and clean environment for food service, and operated cash register.

ACCOMPLISHMENTS, VOLUNTEER, AND HONORS

Sole recipient of Pi Mu Epsilon's 2015 Richard V. Andree Award, given to the author of the paper, written by an undergraduate student, that has been judged the most outstanding to appear in the Pi Mu Epsilon Journal in the past year.

Sole recipient of 2015 Joseph P. McKenna Award for undergraduate researchers in the Saint Mary's College School of Science Summer Research Program. Awarded to the student whose research project and presentation was judged the most outstanding.

Recipient of Saint Mary's College Honors at Entrance Scholarship for entering upperclassmen displaying high academic achievements.

President of the Saint Mary's College Math and Physics Club.

Volunteered at Thousand Oaks Elementary School to help conduct a Story Bridge performance about bullying and acceptance.

Recipient of Iowa State's prestigious George Washington Carver scholarship awarded to students displaying leadership and academic success.

Member of the Iowa State Student Union Board, an organization whose goal is to put on social events for the Iowa State community.

High school internship with Iowa State's Agricultural Engineering Department studying the effects of extrusion on DDGS and other raw materials.

Knowledge of C++, C, Python, SQL, Fortran, and Objective-C programming languages.