

# DIEGO AVALOS

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- *Website:* DiegoAvalos.net

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## Education

- **California State Polytechnic University, Pomona** June 2018  
M.S. in Mathematics (Applied Emphasis) GPA: 3.94
- **University of California, Berkeley** May 2016  
B.A. in Mathematics (Pure Emphasis) GPA: 3.70

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## Employment

- **Graduate Teaching Associate, Cal Poly Pomona** Winter, Spring 2018  
\* Teach intermediate algebra classes as the main instructor. Homework is assigned on *Connect Math*.
- **Academic Excellence Workshop Facilitator, Cal Poly Pomona** Fall 2017  
\* Helped students from the *SEES* program succeed in integral calculus.
- **Math Teacher, C2 Education** March 2017 - September 2017  
\* Created daily lessons for high school students preparing for the ACT/SAT, and AP exams.  
\* Suggested curriculum for advanced math students.
- **Workshop Leader, U.C. Berkeley** Summer 2016  
\* Helped freshmen succeed in their first math class at U.C. Berkeley during *Summer Bridge*.
- **Math and Physics Tutor, Saddleback College** Summer 2012 - Spring 2014  
\* Tutored all math and physics classes offered as a general tutor and supplemental instructor.  
\* Helped engineering students succeed in the accelerated math program *OC Bridge 2 Engineering*.

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## Projects

- **Master's Thesis: An Alternative to Matlab's `expm` Function for Real Skew-Symmetric Matrices**  
\* Theoretically found closed form expressions for  $e^S$ , where  $S$  is a real skew-symmetric matrix  
\* Implemented the formulas for  $e^S$  in Matlab for  $S$  up to size 9  
\* The implemented formulas work more accurately than `expm` as the size of the entries of  $S$  randomly increase
- **Personal Website**  
\* Created and update my personal website DiegoAvalos.net from scratch.
- **Educational Computer Programs**  
\* Created a program that randomly generates solvable linear systems of equations of 2 and 3 unknowns.  
\* Created a program that randomly generates binomial probability questions.  
\* The programs allow students to obtain access to virtually unlimited math exercises.  
\* Instructors can use the programs to generate math exercises to assign for homework.

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## Activities, Memberships, and Awards

- *Membership:* Member of Society for Industrial and Applied Mathematics (SIAM) January 2017 - Present
- *Position:* Science Council Representative of the SIAM Chapter at Cal Poly Pomona Fall 2017 - Spring 2018
- *Talk:* American Mathematical Society (AMS) speaker at U.C. Riverside November 2017  
*Topic:* Calculating Exponentials of Real Skew-Symmetric Matrices in Terms of Their Eigenvalues
- *Award:* SIAM Integration Bee Winner at Cal Poly Pomona 2017 and 2018
- *Award:* Top 8 winner at the Academic Triathlon at Saddleback College 2012 and 2013
- *Award:* The National Science Foundation S-STEM Scholarship May 2013
- *Award:* The Dr. Steve Sworder Memorial Mathematics Scholarship May 2013
- *Membership:* Phi Theta Kappa Honor Society Member 2012 - Present
- *Volunteering:* Math Tutor at Saddleback College Spring 2012

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## Relevant Coursework

- *Graduate:* Mathematical Modeling, Mathematical Programming, Numerical Linear Algebra, Applied Linear Regression, Linear Statistical Models, Optimization Theory and Applications, Mathematics and Sciences Learning for Adults.
- *Undergraduate:* Numerical Analysis, Discrete Mathematics, Galois Theory.

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## Languages and Technologies

- Matlab; R; Python; HTML; Microsoft Excel;  $\text{\LaTeX}$
- R Markdown; Jupyter; Visual Studio; GitHub