

# Alexander Song

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| EDUCATION               | <b>University of California, Santa Barbara</b><br>Bachelor of Science in Mathematics  | September 2015 – September 2018<br>(GPA 4.0/4.0) |
|                         | <b>University of California, Berkeley</b><br>Bachelor of Arts in Philosophy ( <i>highest distinction in general scholarship</i> )   | August 2009 – December 2013<br>(GPA 4.0/4.0)     |
| EXPERIENCE              | <b>UCLA Applied Math REU</b><br><i>NSF REU Program at University of California, Los Angeles</i>   | June 2017 – August 2017                          |
|                         | <ul style="list-style-type: none"><li>Studied a graph-based supervised learning method known as the MBO (Merriman-Bence-Osher) scheme and engineered a feature for detecting officer ego-action in police body-camera recordings.</li></ul> |  |
|                         | <b>UCSB Math Summer Research Program</b><br><i>NSF REU Program at University of California, Santa Barbara</i>   | June 2016 – August 2016                          |
|                         | <ul style="list-style-type: none"><li>Conducted research in numerical linear algebra and matrix theory. Investigated the properties of block-symmetric linearizations of a matrix polynomial.</li></ul>                                     |  |
|                         | <b>Fulbright English Teaching Assistantship</b><br><i>Gimcheon Dasu Elementary School, Gimcheon, South Korea</i>  | July 2014 – July 2015                            |
| TECHNICAL SKILLS        | <b>Languages:</b> C++, Python, Bash<br><b>Tools:</b> GDB, L <sup>A</sup> T <sub>E</sub> X, MATLAB   |  |
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| AWARDS AND HONORS       | Phi Beta Kappa  | December 2012                                    |
|                         | Dean's Honor List (UC Berkeley)   | Fall 2010, Spring 2011                           |
| PAPERS/<br>PUBLICATIONS | Cal Alumni Association Leadership Award   | Fall 2009 – Spring 2010                          |
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| PRESENTATIONS           | <b>A. Song</b> , <i>MBO Scheme for Graph-Based Learning: Theory and Application</i> (unpublished senior thesis).  |  |
|                         | H. Chen, H. Li, <b>A. Song</b> , M. Haberland, O. Akar, A. Dhillon, T. Zhou, A.L. Bertozzi, J.P. Brantingham, <i>First-Person Activity Recognition in Body-Worn Video</i> (in preparation).   |  |
|                         | M. Bueno, J. Perez, M. Martin, <b>A. Song</b> , I. Viviano (2018). <i>Explicit Block-Structures for Block-Symmetric Fiedler-like Pencils</i> , Electronic Journal of Linear Algebra, Volume 34, pp. 472-499.                                |  |
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|                         | <b>“Learning with the Laplacian”</b><br><i>UCSB Society for Industrial and Applied Mathematics (SIAM) Graduate Colloquium</i>   | May 7, 2018                                      |
|                         | <ul style="list-style-type: none"><li>Presented the theory and application of spectral clustering, a form of unsupervised learning.</li></ul>   |  |
|                         | <b>“A Simplified Approach to Block-Symmetric Linearizations of a Matrix Polynomial.”</b><br><i>UCSB Summer Undergraduate and Graduate Research Colloquium</i>   | August 11, 2016                                  |
|                         | <ul style="list-style-type: none"><li>Presented original findings on block-symmetric linearizations of a matrix polynomial, receiving runner-up for “Best Student Poster” (with collaborators M. Martin and I. Viviano).</li></ul>          |  |
|                         | <b>Elevator Pitch Contest</b><br><i>UCSB Undergraduate Research Competition</i>   | August 5, 2016                                   |
|                         | <ul style="list-style-type: none"><li>Participated in a speech contest for presenting research to a non-specialist audience, receiving the popular (audience) vote for “Best Elevator Pitch”.</li></ul>                                     |  |
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