Eric Lybrand

✉ elybrand@ucsd.edu   •   🌐 elybrand.github.io.   •   https://github.com/elybrand

Education

University of California, San Diego   **San Diego, CA**
Ph.D.Candidate in Mathematics - Advised by Rayan Saab   *2015–2020*

University of Georgia   **Athens, GA**
B.Sc. Mathematics   *2011–2015*

Previous Employment

University of California, San Diego   **San Diego, CA**
Academic Student Employee   *2015–Present*
  Senior Teaching Assistant   *2018-2020*
   - Restructured department TA training with Graduate Vice Chair and senior faculty.
   - Led department TA training for 73 math TAs.
   - First Senior TA to serve for two consecutive years.
  Graduate Teaching Assistant   *2015-2018*
   - Integral Calculus, Differential Calculus, Honors Multivariable Mathematics with Manifolds,
     Linear Algebra, Vector Calculus.
  Junior Teaching Assistant   *2017-2018*
  CURE Graduate Research Assistant   *Summer 2017*
   - Served as research mentor for 6 UCSD undergraduates on a NSF funded random matrix theory
     project. Researched empirical spectral distributions of matrices with independent diagonals.
  Graduate Student Researcher   *Summer 2016*
   - NSF funded research in compressed sensing and free spectrahedra with Bill Helton.

Brex   **San Francisco, CA**
Data Science Intern   *Summer 2019*
  · Engineered first generation of machine learning infrastructure for fraud model from scratch.
  · Built and productionized Brex's first ever transaction level fraud detection model.

IPAM & NEC Corporation   **Sendai, Japan**
Graduate Student Researcher   *Summer 2018*
   - Project manager for a team of 6 American and Japanese researchers.
   - Designed a new path-loss model for indoor localization using wireless received signal strength.
     Improved localization error by 1m in some cases. See blog post.

Selected Presentations

One-Bit Compressed Sensing on Manifolds TRIPODS Summer Conference   *May 2019*
Quantization and Low Rank Matrix Recovery BIRS - Banff, Alberta, Canada   *October 2018*
Compressed Sensing and Blind Deconvolution. IPAM GRIPS - Sendai, Japan   *June 2018*
Deterministic Models for Topoisomerase II. UCSD Graduate Student Seminar *February 2017*

Awards and Honors

Oceanids Memorial Fellowship	*2019*
UCSD Math Department Annual TA Award	*2018*
UCSD Senate Research Grant	*2017*
James B. Ax Graduate Fellowship	*2015-2016*
Presidential Scholar	*2014-2015*
Eagle Scout	*2008*

Technical Skills

Programming Languages: Python, SQL, MATLAB, Mathematica, C++ (prior experience), R (prior experience)

Tools/Packages: pandas, numpy, scikit-learn, Git, Docker, Airflow, S3, Keras (prior experience)

Professional Activities

UCSD Graduate Student Association	*2017-2018*
Finance Committee	

Reviewer

SampTA	*2019*
Advances in Computational Mathematics	*2018*
IEEE Statistical Signal Processing Workshop	*2018*

Publications

[1] M. Iwen, E. Lybrand, A. Nelson, and R. Saab. New Algorithms and Improved Guarantees for One-Bit Compressed Sensing on Manifolds. *Sampling Theory and Applications*, 2019.

[2] E. Lybrand and R. Saab. Quantization for Low-Rank Matrix Recovery. *Information and Inference*, 2018.