Eric Lybrand

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Education

University of California, San Diego — **San Diego, CA**
Ph.D. in Mathematics (expected December 2019) — *2015–Present*

Relevant Coursework: Numerical Optimization, Advanced Data Structures, Applied Statistics, Numerical Linear Algebra and Nonlinear Equations, Real Analysis, Functional Analysis

University of Georgia — **Athens, GA**
B.Sc. in Mathematics (Summa Cum Laude) — *2011–2015*

Previous Employment

IPAM & NEC Corporation — **Sendai, Japan**
Graduate Student Researcher — *Summer 2018*

- Worked for the telecommunications corporation NEC on a project that focused on indoor localization using wireless networks.
- Led a team of 6 Japanese and American researchers in designing a new path loss model for indoor localization using wireless received signal strength - resulted in improved localization error by 1m in several cases.

University of California, San Diego — **San Diego, CA**
Academic Student Employee — *October 2015–Present*

Senior Teaching Assistant — *2017-2019*

- Restructured mentor program for 43 new PhD students.
- Co-taught department TA training with senior faculty for 73 math TAs, the largest incoming class of first time TAs.
- Served on Graduate Affairs committee, a committee responsible for managing all matters related to graduate students in the math department.
- Taught Integral Calculus, Differential Calculus, Honors Multivariable Mathematics with Manifolds, Linear Algebra, Vector Calculus.

CURE Graduate Research Assistant — *Summer 2017*

- Served as research mentor for 6 UCSD undergraduates on a NSF funded random matrix theory project, researching empirical spectral distributions of matrices with independent diagonals.

Publications

[1] M. Iwen, E. Lybrand, A. Nelson, and R. Saab. One-Bit Compressed Sensing on Manifolds. *preprint*, 2019.
[2] T. Kemp and E. Lybrand et al. Random Matrices with Independent Diagonals. *preprint*.
[3] E. Lybrand and R. Saab. Quantization for Low-Rank Matrix Recovery. *Information and Inference*, 2018.

Selected Talks

Quantization for Low Rank Matrix Recovery BIRS - Banff, Alberta, Canada — *October 2018*
Compressed Sensing and Blind Deconvolution. IPAM GRIPS - Sendai, Japan — *June 2018*
$\Sigma\Delta$ *Quantization and Low Rank Matrix Recovery.* ICCHA - Nashville, Tennessee — *May 2018*

Awards and Honors

UCSD Math Department Annual TA Award — *2018*
Ranked 2nd in Real Analysis PhD Qualifying Exam (out of 30 students) — *2016*
James B. Ax Graduate Fellowship — *2015-2016*
Presidential Scholar (perfect GPA for whole academic year) — *2014-2015*
Eagle Scout — *2008*

Technical Skills

Programming Languages: MATLAB (primary), Python (secondary), R (some experience), C++ (some experience), C (some experience), SQL (some experience)
Tools/Packages: Mathematica, NumPy, scikit-learn, pandas, TensorFlow, Keras, Git