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

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.
- Model had average precision that was 3x higher than Mastercard's model for transactions from last 30 days.

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 department TA training with Graduate Vice Chair and senior faculty.
- First Senior TA to serve for two consecutive years. Trained largest incoming TA class in department's history.
- Taught Integral Calculus, Differential Calculus, Honors Multivariable Mathematics with Manifolds, Linear Algebra, Vector Calculus. See my evaluations here.

CURE Graduate Research Assistant — *Summer 2017*
- Mentored 6 UCSD undergraduates from under-represented backgrounds on a NSF funded project.

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.

Selected Talks

One-Bit Compressed Sensing on Manifolds TRIPODS Summer Conference - Tucson, Arizona — *May 2019*
Quantization for Low Rank Matrix Recovery BIRS - Banff, Alberta, Canada — *October 2018*

Awards and Honors

Oceanids Memorial Fellowship — *2019*
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: Python, SQL, MATLAB, Mathematica, R, C++, C
Tools/Packages: pandas, numpy, scikit-learn, TensorFlow, Keras, Git, Docker, Airflow, S3