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