# Thang Huynh

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## Academic Positions

July 2016 – present
S.E.W. VISITING ASSISTANT PROFESSOR
Department of Mathematics, UC San Diego, California, U.S.A.
Faculty mentor: Rayan Saab

## Research Summary

I have wide interest in Machine Learning and Mathematical Signal Processing, including both theory and applications. More specifically, I am interested in dimensionality reduction techniques to compress or embed data while also preserving its important information. One the other hand, I am also very interested in the digitization or quantization processes of data. These include developing and analyzing quantization approaches for data acquisition under various models (e.g., in the settings of sparse signal recovery, low-rank matrix completion, phase retrieval, etc.). My research draws upon and develops tools in random matrix theory, information theory, randomized algorithms, and geometric functional analysis to solve such problems.

## Education

June 2016
COURANT INSTITUTE, NEW YORK UNIVERSITY, New York, U.S.A.
PH.D. in Mathematics. Thesis advisor: C. Sinan Güntürk

May 2010
ST LAWRENCE UNIVERSITY, Canton, New York, U.S.A.
B.S. in Mathematics, *Summa Cum Laude*. Advisor: Jim DeFranza

June 2008
DE ANZA COLLEGE, Cupertino, California, U.S.A.
A.A. in Mathematics

## Publications

### JOURNAL ARTICLES

• "Fast binary embeddings, and quantized compressed sensing with structured matrices"
with Rayan Saab, Accepted, *Communications on Pure and Applied Mathematics*.

### CONFERENCE PROCEEDINGS

• "Robust phaselift for phase retrieval under corruptions" with Paul Hand, *Signals, Systems and Computers, 2016 50th Asilomar Conference*, 1039-1042

## Grants, Honors, and Awards

Spring 2016 Hausdorff Institute for Mathematics invitation and grant for participation in trimester program on Mathematics of Signal Processing
2010–2015 Henry MacCracken Fellowship, New York University
2014 GSAS Dean's Student Travel Award, New York University
2010 Bates Award in Mathematics, St Lawrence University

## Teaching Experience

2018 Math 152 "Topics in Data Science", UCSD
Math 102 "Applied Linear Algebra", UCSD
Math 20A "Calculus for Science and Engineering I", UCSD
2017 Math 20D "Introduction to Differential Equations", UCSD
Math 20C "Calculus for Science and Engineering III", UCSD
Math 20B "Calculus for Science and Engineering II", UCSD
2016 Math 170A "Numerical Linear Algebra", UCSD
Math 20E "Vector Calculus", UCSD
2014 Math-UA 121 "Calculus 1", NYU

## Professional Activities – Reviewer for

IEEE Transactions on Signal Processing
IEEE Signal Processing Letters
Journal of Fourier Analysis and Applications
SIAM Journal on Mathematics of Data Science

## Talks and Presentations

### Invited Talks

July 2018 2018 SIAM Annual Meeting, Minisymposia, Portland, OR.
May 2018 7th International Conference on Computational Harmonic Analysis (ICCHA), Vanderbilt University, Nashville, TN
Feb 2018 2018 Information Theory and Applications (ITA) Workshop, San Diego, CA
July 2017 2017 Meeting of the International Linear Algebra Society, Aimes, IA
May 2017 CCoM Seminar, UC San Diego
Feb 2016 Hausdorff Research Institute for Mathematics, Bonn, Germany
Nov 2015 The Norbert Wiener Center Seminar, University of Maryland, College Park

### Conference Presentations and Other Talks

Feb 2018 Poster, February Fourier Talks 2018, University of Maryland, College Park
Oct 2014 Poster, "Discrepancy Theory Workshop", ICERM, Brown University
Apr 2010 Hudson River Undergraduate Mathematics Conference, Keene State College

## Visiting Positions and Summer Schools

Summer 2016

The 26th Annual PCMI Summer Session, "The Mathematics of Data", Park City, Utah

Spring 2016 Hausdorff Research Institute for Mathematics, Hausdorf Trimester Program on Mathematics of Signal Processing, Long-term visitor

Summer 2015 Modern Harmonic Analysis and Applications, IMA Summer Graduate Program, University of Maryland, College Park

## Recent Workshop & Conference Participation

2015
- International Conference on Harmonic Analysis and Applications, The Graduate Center of City University of New York
- The Eighteenth Rivière-Fabes Symposium on Analysis and PDE & Spring 2015 Midwest PDE Conference, University of Minnesota
- The Joint Math Meeting, San Antonio, Texas

2014
- Discrepancy Theory Workshop, ICERM, Brown University
- Approximation, Integration, and Optimization Workshop, ICERM, Brown University
- SAMSI-CRM Workshop on Geometric Aspects of High-dimensional Inference, SAMSI, Research Triangle Park NC

## Programming skills

Scientific computing: Python.

## Languages

Vietnamese (native), English