

CONTACT INFORMATION	School of Mathematics Georgia Institute of Technology 686 Cherry St NW Atlanta, GA 30332 USA shuang.guan@gatech.edu http://shuangguan.me/
EMPLOYMENT	Georgia Institute of Technology, Atlanta, Georgia, USA Visiting Assistant Professor, School of Mathematics, Aug 2026 – Present
EDUCATION	Tufts University, Medford, Massachusetts, USA Ph.D., Department of Mathematics, April 2026 <i>Advisor: Professor Kasso Okoudjou</i> <i>Ph.d. thesis: Uniqueness & Independence in Time-Frequency Analysis</i> New York University, New York, New York, USA M.Sc., Courant Institute of Mathematical Sciences, August 2020 <i>Advisor: Professor Dimitris Giannakis</i> <i>Master thesis: Applications of randomized SVD on Koopman Operators</i> Rensselaer Polytechnic Institute, Troy, New York, USA B.Sc., Department of Mathematics, May 2018 <i>Advisor: Professor Gregor Kovačič</i>
RESEARCH INTERESTS	Applied Harmonic Analysis, Time-Frequency Analysis, Phase Retrieval, Graph Signal Processing
PUBLICATIONS	1. Nonexistence of Approximately Dual Frames via Weighted Composition Operators (Co-authored with Trevor Camper and Dongwei Chen), arxiv.org/abs/2609.12357 2. On the Injectivity of STFT Phase Retrieval with Super-exponential Decaying Window Function (Co-authored with Kasso Okoudjou), arxiv.org/abs/2511.15894 3. HRT Conjecture for a Symmetric $(3, 2)$ Configuration (Co-authored with Kasso Okoudjou), arxiv.org/abs/2607.26878
INDEPENDENT TEACHING	Instructor: • MATH 3012: Applied Combinatorics, Georgia Tech (2 sessions, Fall 2026) • MATH 34: Calculus II, Tufts University (Summer 2023)
PEER REVIEWS	Served as a reviewer for the following journals: • Applied and Computational Harmonic Analysis • Journal of Fourier Analysis and Applications • Sampling Theory, Signal Processing, and Data Analysis • Transactions of the London Mathematical Society

HONORS AND
AWARDS

Fall Fourier Talks Best Poster Award, Norbert Wiener Center for Harmonic Analysis and Applications, October 2024

Voted best poster at the Fall Fourier Talks Conference hosted by Norbert Wiener Center at the University of Maryland, College Park.

CONFERENCES,
WORKSHOPS AND
TALKS

Talks:

- *Upcoming: AMS Fall Western Sectional Meeting*, Tempe, AZ, November 2026.
- *HRT Conjecture for Symmetric Configurations: Bridgewater State University Math Seminar*, Bridgewater, MA, September 2026.
- *HRT is true for real functions and four points: CodEx Summer Student and Postdoc Talks*, Online, July 2026.
- *The HRT Conjecture for a Symmetric (3,2) Configuration: The 9th International Conference on Computational Harmonic Analysis 2026*, Nashville, TN, May 2026.
- *The HRT Conjecture for a Symmetric (3,2) Configuration: AMS Spring Eastern Sectional Meeting*, Chestnut Hill, MA, March 2026.
- *The HRT Conjecture for a Symmetric (3,2) Configuration: Louisiana State University Harmonic Analysis Seminar*, Baton Rouge, LA, March 2026.
- *The HRT Conjecture for a Symmetric (3,2) Configuration: Georgia Tech Analysis Seminar*, Atlanta, GA, January 2026.
- *On the Injectivity of STFT with Super-exponential Decaying Window Function : Frame Theory Day*, Columbia, MO, December 2025.
- *Phaseless Sampling on ρ -th root lattices : Dartmouth Functional Analysis Seminar*, Hanover, NH, September 2025.
- *Phaseless Sampling on ρ -th root lattices : Tufts Analysis Seminar*, Medford, MA, September 2025.
- *HRT Conjecture For Symmetric (3,2) Configuration: AMS Fall Western Sectional Meeting*, Denver, CO, August 2025.
- *Uniqueness of phase retrieval in $L^2(\mathbb{R})$ for functions with super-Gaussian decay : Constructive Functions 2025, Applied and Computational Complex Analysis Session*, Nashville, TN, May 2025.

Contributed Posters:

- *The HRT Conjecture for a Symmetric (3,2) Configuration: ICM 2026 Satellite Conference: Partial Differential Equations and Spectral Theory*, Waco, TX, June 2026.
- *STFT Phase Retrieval for Super-exponential Window Functions. Fall Fourier Talks 2024*, College Park, MD, October 2024.

TEACHING
ASSISTANT
EXPERIENCE

Tufts University

Teaching Assistant:

- MATH34 Calculus II (Fall 2020, Fall 2021)
- MATH34 Calculus III (Spring 2025)
- MATH51 Differential Equations (Spring 2021, Fall 2025, Spring 2026)
- MATH133 Complex Variables (Spring 2022, Spring 2024)
- MATH235 Analysis (Fall 2022, Fall 2023)

UNDERGRADUATE MENTORSHIP	Mentor of the Directed Reading Program, Fall 2021 • Student: Evan Meyer, Senior Undergraduate • Program: Fourier Methods in Partial Differential Equation • Role: Create a schedule of weekly meeting and assignment with the student to study Fourier series method in partial differential equations. The content is mainly based on Stein's <i>Fourier Analysis: An Introduction</i>.
DEPARTMENTAL SERVICE	Co-Organizer, Analysis Seminar at Tufts University, 2022-23 Math Department Office Assistant, 2021-2026 Tufts Community Day, 2024
LANGUAGE SKILLS	English: Fluent Chinese: Native Computer: L^AT_EX, Python, SQL, MATLAB