

Naga Manasa Vempati

CONTACT INFORMATION

School of Mathematics
Georgia Institute of Technology
North Ave NW, Atlanta, GA 30332

Email: nvempati6@gatech.edu
Website: manasavempati.com
Office: Skiles 014

CURRENT POSITION

Visiting Assistant Professor - Georgia Institute of Technology

Fall 2021–Spring 2024.

Postdoctoral Fellow - ICERM, Brown University

Fall 2022.

EDUCATION

Ph.D. in Mathematics - Washington University in St. Louis

2016–2021

A.M. in Mathematics - Washington University in St. Louis

2016–2018

Masters in Mathematics - Indian Statistical Institute, India

2014–2016

Bachelors in Mathematics (Honors) - Indian Statistical Institute, India

2011–2014

RESEARCH INTERESTS

Harmonic Analysis and its Applications, PDE's, Functional Analysis, Geometric Measure Theory and Complex Analysis of Several Variables.

PUBLICATIONS

Publications & Preprints

1. (with R. Gong, J. Li, E. Pozzi) *A note on commutators on weighted Morrey spaces on spaces of homogeneous type*, Analysis and Geometry in Metric Spaces (2020)(8), 305-334.
2. (with X. T. Duong, J. Li, E. T. Sawyer, B. D. Wick, D. Yang) *A two weight inequality for Calderón-Zygmund operators on spaces of homogeneous type with applications*, Journal of Functional Analysis (2021) 281 (9), 109190.
3. (with J. M. Conde-Alonso, F. Di Plinio, I. Parisis) *A metric approach to sparse domination*, Annali di Matematica Pura ed Applicata (2022) 201 (4), 1-37.
4. (with R. Gong, Q. Wu, P. Xie) *Boundedness and compactness of Cauchy-type integral commutator on weighted Morrey spaces*, Journal of the Australian Mathematical Society (2022) 113 (1), 36-56.
5. (with R. Gong, Q. Wu) *A note on two weight commutators of maximal functions on spaces of homogeneous type*, preprint (2020) arXiv:2012.00575, submitted to: Bulletin of the Australian Mathematical Society.
6. (with P. Chen, M. Lacey, J. Li) *Compactness of the Bloom sparse operators and applications*, preprint (2022) arXiv:2204.11990, submitted to: Canadian Journal of Mathematics.
7. (with J. Fan, M. Lacey, J. Li, B. D. Wick) *Besov space, Schatten classes and commutators of Riesz transforms associated with the Neumann Laplacian*, preprint (2022) arXiv:2210.04358, submitted to: Michigan Mathematical Journal.

8. (with B. Jaye) *Even singular integral operators that are well behaved on a purely unrectifiable set*, preprint (2022) arXiv:2210.09522, submitted to: Analysis & PDE.
9. (with M. Lacey, J. Li, B. D. Wick) *On commutator of Cauchy integral along Lipschitz Curves*. (Preprint available)

Under Preparation

10. (with J. Li, E. T. Sawyer, B. D. Wick) *Weighted inequality for the bilinear Calderón-Zygmund operators*. (In preparation)
11. (with N. Wagner) *Sparse domination for strong maximal function*. (In preparation)

TEACHING EXPERIENCE

Instructor - School of Mathematics, Georgia Institute of Technology

- Math 3235 Probability Theory Spring 2022
- Math 1552 Integral Calculus Fall 2021

Instructor - University College, Washington University in St. Louis

- Math 2200 Elementary Probability and Statistics (**Online Class**) Summer 2020
- Math 1011 Introduction to Statistics (**Online Class**) Summer 2020
- Math 2200 Elementary Probability and Statistics Summer 2019
- Math 217 Differential Equations Summer 2017

Teaching Assistant - Washington University in St. Louis

- Math 217 Differential Equations Spring 2020
- Math 217 Differential Equations Fall 2019
- Math 132 Calculus II Spring 2019
- Math 132 Calculus II Fall 2017

AWARDS AND SCHOLARSHIPS

- *Albert Baernstein II Award for Best Thesis in Mathematics and Statistics* *Awarded Spring 2021*
- *Pacific Institute of Mathematics Postdoctoral Grant* *Awarded Spring 2021
(Respectfully declined)*
- *University Dissertation Fellowship* *Fall 2020–Spring 2021*
- *Graduate Teaching Assistant Fellowship* *Fall 2017–Spring 2020*
- *University Fellowship* *Fall 2016–Spring 2017*
- *Travel award (2500 USD) to visit University of Kansas
For excellent performance in M.S Mathematics
(Indian statistical Institute)* *Fall 2015*
- *Indian Statistical Institute Fellowship
For Bachelors and Masters in Mathematics* *Fall 2011–Spring 2016*

TALKS, CONFERENCES, AND WORKSHOPS

Talks (colloquia, seminars, and conferences)

- (upcoming) Invited talk as Semi-Plenary speaker, SEAM 39, Clemson University, Spring 2023.
- (upcoming) AMS Southeastern Sectional, Inequalities in Harmonic Analysis, University of Cincinnati, Spring 2023.
- (upcoming) AMS Southeastern Sectional, Special session in Harmonic Analysis, Georgia Tech, Spring 2023.
- (upcoming) Postdoc and Graduate Student Seminar, ICERM, Brown University, Fall 2022.
- Invited talk at 2TART Seminar, Fall 2021.
- Invited talk at Clemson University's Analysis Seminar, Fall 2021.
- Invited talk, SIAM Student Chapter, Georgia Tech, Fall 2021.
- Invited talk, Research Horizons Seminar, Georgia Tech, Fall 2021.
- Invited talk, Analysis Seminar, Georgia Tech, Spring 2021.
- Analysis Seminar, Washington University in Saint Louis, Spring 2021.
- Invited talk in Spring 2021 - AMS Special Session on Operator Theory and approximation of spaces of analytic functions, Spring 2021.
- Invited talk at second Mid-Atlantic Analysis Meeting, Online Conference, Fall 2020.
- Analysis working Group Seminar, Washington University in St. Louis, Fall 2019.
- Analysis Seminar, Washington University in St. Louis, Spring 2018.
- Analysis working Group Seminar, Washington University in St. Louis, Spring 2018.
- Math Circle, Washington University in St. Louis, Fall 2017.
- Szegő Graduate Seminar, Washington University in St. Louis, Spring 2017.

Conferences and Lecture series

- Guido Weiss Memorial Conference On Harmonic Analysis, Washington University in St. Louis, October 8-9, 2022.
- Harmonic Analysis and related topics, online conference, June 13-17, 2022.
- Virtual Analysis and PDE seminar (weekly fall semester 2021 and Spring 2022).
- Georgia Tech Analysis seminar series (weekly fall semester 2021).
- Mid-Atlantic Analysis Meeting, online seminar series (weekly fall semester 2020), online conference, October 16-18, 2020.
- Virginia Operator Theory and Complex Analysis Meeting 2020, online meeting, October 3rd, 2020.
- Sparse Domination in Harmonic Analysis, Online Lecture Series, September 1-3, 2020.
- 7th Midwest Women in Math Symposium, University of Iowa, Iowa, April 12-13, 2019.
- Ninth Ohio River analysis meeting, University of Cincinnati, Ohio, March 30-31, 2019.
- 34th SouthEastern analysis meeting, Georgia Institute of Technology, Georgia, March 23-25, 2018.
- Lectures on Probability and Stochastic Processes X, IISc, Bangalore, December 13-16, 2015.
- ATMW Analysis and Geometry, TIFR-CAM, Bangalore, January 6-10, 2014.

UNDERGRADUATE STUDENTS MENTORED

- *Edward W Bielawa, Brown University - Summer 2022, Georgia Tech Undergraduate Research (REU).*
- *Peter Grundy Nydam - Summer 2022, Georgia Tech Undergraduate Research (REU).*
- *Zhaocheng Dong, Columbia Univeristy - Summer 2022, Georgia Tech Undergraduate Research (REU).*

SERVICE

Outreach

- *REU, Georgia Tech.*
- *Diversity, Equity, and Inclusion (DEI) Committee for AY 22-23 (Elected at the School of Mathematics, Georgia Institute of Technology.)*

Conference and Seminar Organizing

- *AMS Sectional Meeting, special session on Harmonic Analysis (with Ben Jaye and Betsy Stovall) Georgia Tech, March 18-19, 2023.*
- *Post Doc and Graduate Student Seminar (with Maud Szusterman and Sudan Xing) ICERM, Brown University, Fall 2022.*

Journals Refereed

- *The New York Journal of Mathematics*
- *Mathematische Nachrichten*
- *Analysis Mathematica*

Professional Memberships

- *Association For Women in Mathematics (ICERM)*
- *American Mathematical Society*

COMPUTER SKILLS

- *Basic Knowledge: C, Python*
- *Statistical Knowledge: R, Matlab*

PERSONAL INFORMATION

- *Nationality : Indian*
- *Languages : Fluent in English, Hindi and Telugu (native)*