Anuj Abhishek **Curriculum Vitae**

CONTACT INFORMATION

Department of Mathematics
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EDUCATION

Tufts University, Medford, Massachusetts, USA
Ph.D., Department of Mathematics, expected in Summer 2018
Advisor: Professor Eric Todd Quinto(Tufts University)
Co-Advisor: Professor Venky Krishnan (TIFR, Bangalore)

TIFR - Centre for Applicable Mathematics, Bangalore, India
M.Sc., July 2013

Manipal Institute of Technology, Manipal, Karnataka, India
Bachelor of Engineering, June 2010
Undergraduate major: Electronics and Communication Engineering

RESEARCH INTERESTS

Integral Geometry

Microlocal Analysis

Image Reconstruction

ON-GOING RESEARCH

My work so far has focused on proving support theorems for certain integral transforms on simple, compact Riemannian manifolds. I am also applying the techniques of microlocal analysis to study artifacts that appear in image reconstruction problems from restricted Radon transform data, that arise in various physical problems.

PREPRINTS AND WORKS IN PROGRESS

Support Theorem for transverse ray transform of a symmetric tensor field of rank 2 (Submitted)

Support theorems and an injectivity result for integral moments of a symmetric m-tensor field, with Rohit Kumar Mishra (Submitted)

Artifacts in a restricted ultrasound problem (Manuscript in preparation)

CONFERENCES, WORKSHOPS AND TALKS

Talks:

- *The Singular Applications of Microlocal Analysis*, Tufts SIAM meeting, Medford, MA, March 9, 2016.
- *A Support Theorem for Integral Moments of a Symmetric m-Tensor Field*: Mini-Symposium on Numerical microlocal analysis, 100 Years of Radon Transform, Linz (Austria), March 27- March 31, 2017
- *Support theorems for some integral transforms*, University of Bath, Bath (U.K.), April 25, 2018

Contributed Posters:

- *Characterization of Artifacts in Common Offset Synthetic Aperture Radar Imaging.* Workshop on Computational and Analytical Aspects of Image Reconstruction, ICERM, Brown University, Providence, RI, July 13-17, 2015
- *A Support Theorem for Integral Moments of a Symmetric m-Tensor Field.* Workshop on Optical Imaging and Inverse Problems, IMA, University of Minnesota, February 13- 17, 2017

Workshops and Conferences Attended

- 100 Years of the Radon Transform RICAM, Linz (Austria), March 27-31, 2017.
- Workshop on Optical Imaging and Inverse Problems, IMA, University of Minnesota, February 13- 17, 2017.
- Computational and Analytical Aspects of Image Reconstruction, Brown University, Providence, RI, July 13-17, 2015.
- Advanced Instructional School on Theoetical and Numerical Aspects of Inverse Problems, TIFR-CAM, Bangalore, India, June 16-28, 2014.
- Advanced Instructional School on Analysis and Geometry, TIFR-CAM, Bangalore, India, July, 2013.
- Advanced Instructional School on Partial Differential Equations, TIFR-CAM, Bangalore, India, December 17, 2012- January 4, 2013.

Teaching Experience

Tufts University

Instructor:

- MATH 32 Calculus I (Fall 2015) This course was multi-section and team-taught. Responsibilities included lecturing, reviewing and grading exams, and holding office hours
- MATH 19 Math of Social Choice (Fall 2016, Summer 2017, Summer 2018) This course was taught independently, and additional responsibilities included writing Homeworks and exams.

Honors and Awards

Tata Institute of Fundamental Research Masters Fellowship, 2011 - 2013

Received Airbus Travel grant to conduct research at TIFR-CAM (2015, 2016)

Received Graduate Student Travel Fund from Tufts University to attend "100 Years of Radon Transform" organized by RICAM, Linz (Austria)

Graduate Student Teaching Award, Tufts University (2017-18)

Memberships

Society for Industrial and Applied Mathematics (SIAM)

Departmental Service

Officer : Society for Industrial and Applied Mathematics, Tufts University Chapter, 2016- 2017

Computer Skills

LaTeX, MATLAB, familiar with Python