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Sex: Male
Citizenship: Indian

Education: Princeton University, Ph.D. March 2009,
Indian Institute of Technology, Bombay, 5 Yr. Integrated M.S., Mathematics,
2002.

Major Fields of Interest: Algebraic Geometry, Homological Algebra, and Category Theory.

Ph.D. Thesis: “Recovering a variety from its derived category”.

Abstract: We prove that a fibration over a fixed smooth scheme with projective smooth Fano/Anti Fano generic fibers and smooth total space is determined by the derived category of the total space (A Torelli type result in the derived setting). The same techniques also prove a similar recovery result for twisted varieties. This supports the basic philosophy that the derived category can in fact be looked at as an invariant of the variety containing geometric information, instead as just an abstract tool or a language for convenient calculations and statements.

Thesis Advisor: Dr. Phillip Griffiths.

Fellowships and Awards:

Princeton University Fellowship, 2002-2007.
Fellowship offers from University of Chicago and University of California at Berkeley.
Graduate School Summer Fellowship, Princeton University, 2003-2007.
Academic Merit Prize, Princeton University, 2002.
National Board For Higher Mathematics M.A./M.S. Fellowship, 2000-2001.
National Board for Higher Mathematics Fellowship for Mathematics Nurture Program Participants, 1998-2001.
Department Rank 1 Prize, 2000-2001.
Ratan Tata Fellowship in Science, 1998-2000.
Indian National Mathematics Olympiad Award, 1996.

Teaching Experience:

Instructor:
Linear Algebra and Applications, University of Miami, Fall 2008 Spring 2009,
Princeton University, Fall 2007.
Differential and Integral Calculus, University of Miami, Fall 2008, Spring 2009, Fall 2009, Princeton University, Summer 2007.
Multivariable Calculus, Princeton University, Spring 2003.

Teaching Assistant:

Multivariable Calculus, Princeton University, Spring 2006, Spring 2005, Fall 2004, Spring 2004, Fall 2003.

Complex Analysis, Princeton University, Spring 2007.

Number Theory, Princeton University, Fall 2006.

Abstract Algebra, Princeton University, Fall 2005.

Differential Geometry, Princeton University, Fall 2004.

Conferences and Talks:

Summer Institute in Algebraic Geometry, Seattle, 2005.

Winter School on Algebraic, Symplectic and Arithmetic Geometry, Miami 2005.

CMI Summer School in Arithmetic Geometry, Göttingen, 2006.

Geometry Seminar, University of Los Andes, Bogota, June 2008.

Geometry Seminar, University of Miami, September 2008.

Winter School in Homological Mirror Symmetry, Miami January 2009,

Mathematics Colloquium, University of Los Andes, Bogota, August 2009.

Geometry Seminar, University of Los Andes, August 2009.

Work in Progress:

“Relative version of Bondal Orlov Theorem over any smooth base”.

Generalizing the results of Ph.D. thesis to the case of a smooth but not necessarily projective base.

“Absolute hodge conjecture for hypersurfaces”.

Adapting Deligne’s proof of Absolute hodge conjecture for Abelian varieties to hypersurfaces.

“Conceptual proof of Brill-Noether Problem”.

Re-interpreting the Brill-Noether problem in the language of dg-categories with the hope of producing a more conceptual proof, possibly answering related open problems.

Languages:

English, Marathi, Hindi and Spanish. Basic familiarity with French & German.

References:

Prof. **Phillip Griffiths**
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Prof. **Ludmil Katzarkov**
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Prof. **Rahul Pandharipande**
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