Badri Vishal Pandey

Contact Information	Mathematical Institute
	Universität zu Köln
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Research Interests

Analytic and Algebraic Number Theory (Elliptic curves, Modular forms, Partitions, Hypergeometric series)

Education

Universität zu Köln, Köln, Germany

Post-doc March, 2023 - February, 2026

Mathematics
Supervisor: **Prof. Dr. Kathrin Bringmann**
W3 Professor (full professor), Mathematical Institute,
University of Köln

University of Virginia, Charlottesville, VA

PhD July, 2019 - December, 2022.

- *Mathematics*
Thesis title: On Higher Turán Inequalities for the Plane Partitions, Ellipsoidal T-Designs, and j-Inversion
Thesis advisor: **Ono, Ken**
Marvin Rosenblum Professor of Mathematics, Department of Mathematics, University of Virginia.

Indian Statistical Institute, Bangalore, India

M.Math July, 2017-2019.

- *Mathematics*

Indian Statistical Institute, Bangalore, India

B.Math(Hons.) July, 2014-2017.

- Major: *Mathematics*

Papers and publications

- Modular forms and Ellipsoidal T-designs, The Ramanujan Journal

- Inversion Formulas for the j-function Around Elliptic Points (Co-author: De Las Penas Castano, A), Archiv der Mathematik

- Higher Order Turán Inequalities for the Plane Partition Function (submitted)

- Linear congruence relations for exponents of Borcherds products (Co-author: Mono, A) (submitted)

- Biases among classes of rank-crank partitions modulo 11 (Co-author: Prof. Dr. Bringmann, K) (submitted)

TALKS

- Linear congruence relations for exponents of Borcherds products,   May 2023
  35th Automorphic Forms Workshop, LSU

- Inversion of the Modular j-function   February 02, 2023
  KSCSTE, Kerala

- Inversion of the Modular j-function   January 25, 2023
  IMSc, Chennai

- Higher Turán Inequalities for the Plane Partitions   January 19, 2023
  Indian Statistical Institute, Bangalore

- On Higher Turán Inequalities for the Plane Partitions, Ellipsoidal T-Designs, and
  j-Inversion   May, 2022
  Graduate seminar, University of Virginia

- Inversion of the Modular j-function   May, 2022
  NISER, Bhubneswer

- Ellipsoidal T-design   December 17, 2020
  18th Nagoya combinatorial seminar

- Lightning Rounds by graduate students,   March 03, 2020
  UVA Undergraduate Math Club

TEACHING
EXPERIENCE

- *Teaching assistant for Analytic number theory,*   Winter 2023
  University of Cologne

- *Mentor for Directed Reading Program at University of Virginia,*   Fall 2022
  University of Virginia

- *Teaching Assistant for Research Experiences for Undergraduates at the University
  of Virginia,*   Summer 2022

- *Instructor for Math 1220, A survey of calculus 2,*   Fall 2021
  University of Virginia

- *Teaching Assistant for Research Experiences for Undergraduates at the University
  of Virginia,*   Summer 2021

- *Instructor for Math 1220, A survey of calculus 2,*   Spring 2021
  University of Virginia

- *Instructor for Math 1210, A survey of calculus 1,*   Fall 2020
  University of Virginia

- *Teaching Assistant for Research Experiences for Undergraduates at the University of Virginia,*   Summer 2020

- *Teaching Assistant for Math 3250, Ordinary Differential Equations,*   Spring 2020
  University of Virginia

- *Grader for Math 3310, Basic Real Analysis,*   Spring 2020
  University of Virginia

- *Teaching Assistant for Math 2310, Calculus III,*   Fall 2019
  University of Virginia

- *Grader for Math 4651, Advanced Linear Algebra,*   Fall 2019
  University of Virginia

CONFERENCES AND WORKSHOPS

- *1st Analytic Number Theory & Automorphic Forms Conference in Patras,*   July 17-21, 2023

- *35th Automorphic Forms Workshop,*   May 22-27, 2023

- *Virginia Mathematics Lecture: Martin Hairer (Imperial College London),*   November 29-December 1, 2022

- *100 Years of Mock Theta Functions (attended virtually),*   May 22-24, 2022

- *Virginia Mathematics Lecture: Mikhail Khovanov (Columbia),*   April 18-20, 2022

- *Virginia Mathematics Lecture: Curtis McMullen (Harvard),* November 8-10, 2021

- *Virginia Mathematics Lecture: Greg Lawler (UChicago),*   February 12-14, 2020

- *Virginia Mathematics Lecture: Peter Sarnak (IAS Princeton),* November 4-9, 2019

- *Advanced Instructional School on Topology,*   May 2018
  National Board of Higher Mathematics

- *Algebraic Geometry,*   Dec 2017
  Indian Statistical Institute

ACHIEVEMENTS AND SCHOLARSHIPS	*Among top 100* TIFR Graduate School Admissions Written Exam	2019
	Rank 46 CSIR UGC National Eligibility Test	2018
	Academic fellowship for excellent performance BMath Third year	2017
	Academic fellowship for being second rank holder BMath First year	2014
	Ranked 21 out of 150,000 candidates Uttar Pradesh State Engineering Entrance Exam	2014

REFEREEING

- *Journal of Number Theory*

- *International Journal of Number Theory*

- *Research in Number Theory*

- *The Ramanujan Journal*

- *Transactions of the American Mathematical Society*

- *Annals of Combinatorics*

- *Involve*

EXTRACURRICULAR ACTIVITIES

• *ISI intra-college Cricket tournament winner*, Indian Statistical Institute, Bangalore center	2018 & 2023
• *ISI intra-college Soccer tournament winner*, Indian Statistical Institute, Bangalore center	2015 & 2017
• *Sports Committee Member*, Indian Statistical Institute, Bangalore center	2015
• *Mentor of first year undergrad*, Indian Statistical Institute, Bangalore center	2015

TECHNICAL SKILLS

Sage(elementary), Python(elementary), Mathematica, Octave, LaTeX, C, C++, html