

Badri Vishal Pandey

CONTACT INFORMATION

Mathematical Institute
Universität zu Köln
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RESEARCH INTERESTS

Analytic and Algebraic Number Theory

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)

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* 2019
TIFR Graduate School Admissions Written Exam
- Rank 46* 2018
CSIR UGC National Eligibility Test
- 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* 2014
Uttar Pradesh State Engineering Entrance Exam

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*

EXTRACURRICULAR
ACTIVITIES

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

TECHNICAL
SKILLS

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