

# Narayan Rakshit

Assistant Professor in the Department of Mathematics at IIT Roorkee,  
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## Professional Positions held

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1. Assistant Professor in the Department of Mathematics at IIT Roorkee since June 20, 2023 to present.
2. Assistant Professor in the Department of Mathematics at VNIT Nagpur during the period June 20, 2022 to June 19, 2023.

## Research Experience

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1. Postdoctoral fellow in the department of Mathematics at Harish-Chandra Research Institute, Prayagraj (Allahabad), February 22, 2022- June 18, 2022.
2. Postdoctoral fellow and teaching assistant in the Stat-Math Unit at Indian Statistical Institute, Bangalore Center, April 1, 2019- February 21, 2022.
3. Visiting Scientist at Indian Statistical Institute, Bangalore Center, January 1, 2018- March 31, 2019.

## Teaching Experience

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1. Integral Transform and Partial Differential Equation (MAL 201), Second year B.Tech, VNIT Nagpur.
2. Mathematics I (MAL 101), First year B.Tech, VNIT Nagpur.
3. Complex Analysis (MAL 521), MSc. first year, Department of Mathematics, VNIT Nagpur.
4. Numerical Methods and Probability Theory (MAL 205), Second year B.Tech, VNIT Nagpur.

## Education

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<b>Ph.D. in Mathematics, Indian Statistical Institute, Kolkata</b> Supervisor: Dr. Paramita Das. Thesis title: Annular algebra of group-type subfactors. Focus: Operator algebras. PhD. viva voce date: March 20, 2018.	July, 2011- March, 2018.
<b>Master of Science in Mathematics</b> Indian Institute of Technology, Kanpur.	July, 2009–June, 2011.
<b>Bachelor of Science in Mathematics</b> University of Burdwan.	July, 2006–June, 2009.

## Research interest

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- **Operator algebras:** Subfactor theory, rigid  $C^*$ -tensor categories, von Neumann algebras, completely positive and completely bounded maps and dilation theory.
- **Operator theory:** Wold decomposition and pair of commuting isometries.

## Publications (Published and Accepted)

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1. Narayan Rakshit, Jaydeb Sarkar and Mansi Suryawanshi, *Orthogonal decompositions and twisted isometries*. **Internat. J. Math.**, **33(8)**, 2250058 (28 pages), 2022.  
DOI: <https://doi.org/10.1142/S0129167X22500586>.
2. B.V.R. Bhat, P. Bikram, S. De and N. Rakshit, *Poisson boundary on full Fock space*. **Trans. Amer. Math. Soc.**, **375(8)**, 5645-5668, 2022.  
DOI: <https://doi.org/10.1090/tran/8684>.
3. B.V.Rajarama Bhat, sandipan De and Narayan Rakshit, *A caricature of dilation theory*. **Adv. Oper. Theory**, **6(4)**, article no. 63, 2021.  
DOI: <https://doi.org/10.1007/s43036-021-00157-y>.
4. Jyotishman Bhowmick, Shamindra Kumar Ghosh, Narayan Rakshit and Makoto Yamashita, *Tube representations and twisting of graded categories*. **Theory Appl. Categ.** **33(31)**, 964-987, 2018.
5. Dietmar Bisch, Paramiita Das, Shamindra Kumar Ghosh and Narayan Rakshit, *Tube algebra of group-type subfactors*. **Internat. J. Math.** **28(10)**, 1750069, 32 pp, 2017.
6. Narayan Rakshit, Jaydeb Sarkar and Mansi Suryawanshi, *Orthogonal decompositions and twisted isometries II*. To appear in **Journal of Operator Theory**, 2023.  
arXiv:2104.07628, 2022.

## Awards and Fellowships

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- (i) **National Board for Higher Mathematics Post Doctoral Fellowship**.
- (ii) **Junior Research Fellowship**  
Indian Statistical Institute , 2011.
- (iii) **Merit Cum Means Scholarship**  
Indian Institute of Technology , 2009.
- (iv) **CSIR-UGC Net December 2011 and June 2012** (not availed)
- (v) **Gate 2011** (not availed)

## Talks at Workshops and Conferences

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- (i) A conference on ergodic theory and von Neumann algebra Aug 04 - 06, 2022, NISER, Odisha, India.

## Workshops and Conferences (attended)

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- (i) Calculus and Differential Geometry at Indian Statistical Institute, Kolkata (Nov 28th - Dec 10th , 2011).
- (ii) Winter School on Functional Analysis at IMSc , Chennai (Nov 26th - Dec14 ,2012).
- (iii) IMSc-ISI Joint Workshop on Subfactors at IMSC, Chennai (Dec 30 ,2013 - Jan 10, 2014).
- (iv) Master -Class in Modular Theory of von Neumann algebras at IMSc, Chennai ( Nov 24 - Dec 05, 2014).
- (v) Recent Advances in Operator Theory and Operator Algebras at ISI Bangalore, (Only Workshop part ,Dec 09 - Dec 13 , 2014).
- (vi) Trimester Program on von Neumann Algebras at Hausdorff Research Institute for Mathematics, Bonn, Germany ( May 02 - aug 26 , 2016).
- (vii) Recent Advances in Operator Theory and Operator Algebras at ISI Bangalore, (Only Workshop part ,Dec 13 - Dec 17 , 2016).
- (viii) Recent Advances in Operator Theory and Operator Algebras at ISI Bangalore, Dec 13 - Dec 19 , 2018.
- (ix) 42 nd International Conference on Quantum Probability, and Infinite Dimensional Analysis (QP 42), ISI Bangalore, January 17-20, 2022.