

Renu Shekhawat

Stat-Math Unit, Indian Statistical Institute, 8th Mile, Mysore Road, RVCE Post, Bengaluru - 560 059
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Education

Indian Statistical Institute, Bangalore Centre
Philosophiae Doctorate in Mathematics
Supervisor : **Prof. Soumyashant Nayak**

Bengaluru, India
Jul 2019-present

University of Rajasthan
Master of Mathematics

Jaipur, India
Aug 2016 - Aug 2018

Sophia Girls' College
Bachelor of Mathematics

Ajmer, India
Jul 2013 - Jul 2016

Research Interests

Matrix analysis, Functional analysis, Operator algebras

Publications / Preprints

- S. Nayak, R. Shekhawat; *On the Convergence of the Normalized Power Sequence of Spectral Operators on Hilbert Space* (2024), available at : <https://arxiv.org/abs/2410.16318>
(Accepted for publication in JOT)
- S. Nayak, R. Shekhawat; *On the Jordan-Chevalley-Dunford decomposition of operators in type I Murray-von Neumann algebras* (2025), available at : <https://arxiv.org/abs/2506.17227>
(Submitted for publication).

Thesis

On the Jordan-Chevalley-Dunford Decomposition of Certain Classes of Operators and Convergence of Their Normalized Power Sequences. (Submitted in June 2025).

Fellowships / Scholarships

- **Junior Research Fellowship**

(Declined due to acceptance of the Institute fellowship at ISI)

– University Grants Commission, Government of India.

Dec 2018

– Council of Scientific and Industrial Research, Department of Science and Technology,
Government of India.

Jun 2017

- **Inspire Scholarship for Higher Education**

Department of Science and Technology, Government of India.

Jul 2013 - Jul 2018

Teaching Assistant / Grader

- Real Analysis, B.math(I) - Semester I Aug 2025 - Nov 2025
Instructor : Prof. B. V. Rajarama Bhat
- Function spaces, B.math(III) - Semester I Aug 2023 - Nov 2023
Instructor : Prof. Soumyashant Nayak
- Complex Analysis, M.Math(I) - Semester II Jan 2022 - May 2022
Instructor : Prof. Ramesh Sreekantan
- Complex Analysis, B.Math(III) - Semester I Sep 2021 - Dec 2021
Instructor : Prof. Mathew Joseph

Conferences / Workshops Attended

- **School on Invariant Structures in Group Actions** Będlewo, Poland
Research and Conference Centre of IMPAN, Będlewo Jan 11 - 16, 2026
- **Young Mathematicians in C^* Algebras (YMC^{*}A) 2025** Odense, Denmark
University of Southern Denmark (SDU), Odense Jul 21 - 25, 2025
- **International Workshop on Operator Theory and its Applications (IWOTA) 2025** Enschede, Netherlands
University of Twente, Enschede Jul 14 - 18, 2025
- **20th Workshop: Noncommutative Probability, Operator Algebras and Related Topics, with Applications** Będlewo, Poland
Research and Conference Centre of the Institute of Mathematics of the Polish Academy of Sciences, Będlewo Jul 6 - 12, 2025
- **Young Mathematicians in Operator Algebras** Delhi, India
Indian Statistical Institute, Delhi Centre Mar 24 - 28, 2025
- **Conference on Operator Algebra and Related Topics (COART)** Mumbai, India
Indian Institute of Technology, Bombay Feb 24 - 29, 2025
- **Noncommutative Mathematics and Applications (NCMA)** Bengaluru, India
Indian Statistical Institute, Bangalore Centre Oct 24 - 26, 2024
- **Young Mathematicians in Operator Algebras** Delhi, India
Indian Statistical Institute, Delhi Centre Feb 26 - Mar 02, 2024
- **International Conference on Spectral and Approximation Theory (ICSAT)** Kochi, India
Cochin University of Science and Technology, Kerala Nov 27 - 30, 2023
- **Conference on Functional Analysis and Related Topics (CFART)** Mumbai, India
Indian Institute of Technology, Bombay Feb 21 - 25, 2023
- **IWM (Indian Women and Mathematics) Annual Conference** Pune, India
Indian Institute of Science Education and Research, Pune Dec 27 - 29, 2022

- **Indo-French Centre for Applied Mathematics (IFCAM)**
Summer School on Mathematical Aspects of Quantum Mechanics
Indian Institute of Science, Bengaluru

Bengaluru, India
Jun 01 – 12, 2022

Talks

- **Invited:**

- As an *early Career Researcher* in **Simons Semester**
“**Invariant Structures in Groups, Spaces, and Algebras**”
Institute of Mathematics of the Polish Academy of Sciences, Warsaw Jan 11 - Feb 15, 2026
- For a talk, *A spatial form of Yamamoto’s theorem for spectral operators*,
Analysis and Probability Research Group (APRG) Seminar,
Indian Institute of Science, Bengaluru Sep 22, 2025

- **Contributed Talks :**

- *A stronger form of Yamamoto’s theorem on singular values*
IWOTA 2025, University of Twente, Enschede Jul 18, 2025
- *Jordan-Chevalley-Dunford decomposition in Type I Murray-von Neumann algebras*
20th Workshop: Noncommutative Probability, Operator Algebras and Related Topics,
with Applications, Będlewo Jul 10, 2025
- *Convergence of the normalized power sequence for spectral operators*
COART, Indian Institute of Technology, Bombay Feb 27, 2025
- *On Matrices over $C(X)$ for X a Stonean space*
ICSAT, Cochin University of Science and Technology, Kerala Nov 27, 2023

- **Seminar Talks :**

- *An elementary computational approach to the Jordan-Chevalley decomposition and the Jordan canonical form.*
PDF - RS Annual Symposium, Indian Statistical Institute, Bangalore Centre Jan 31, 2025
- *Convergence of the normalized power sequence for spectral operators*
QP - Day at ISI, Indian Statistical Institute, Bangalore Centre Jan 15, 2025