

# Curriculum Vitae

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## Ranjana Jain

Assistant Professor  
Department of Mathematics  
University of Delhi  
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### Education:

- **Ph.D. in Mathematics** January, 2012  
Thesis Title:  
*Operator Space Tensor Products of  $C^*$ -algebras and their Ideal Structure*  
Advisor: Prof. Ajay Kumar  
University of Delhi
  - **M.Phil. in Mathematics** July, 2005  
Dissertation Title:  
*A Study of Frames in Banach Spaces and Localization of Frames*  
Advisor: Prof. P. K. Jain  
University of Delhi
  - **M.A. in Mathematics** July, 2003  
St. Stephen's College  
University of Delhi
  - **B.A. (Hons.) in Mathematics** July, 2001  
St. Stephen's College  
University of Delhi
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### Publications:

- (1) *Independent point-set domination in line graphs*  
Purnima Gupta, Alka Goyal and Ranjana Jain. under communication (2021)
- (2) *Center of Banach algebra valued Beurling algebras*  
Bharat Talwar and Ranjana Jain, To appear in Bull. Aust. Math. Soc. (2021).
- (3) *On closed Lie ideals and center of generalized group algebras*  
Ved Prakash Gupta, Ranjana Jain and Bharat Talwar. *J. Math. Anal. Appl.* 502 (1) (2021)
- (4) *Closed ideals and Lie ideals of minimal tensor product of certain  $C^*$ -algebras*  
Bharat Talwar and Ranjana Jain. *Glasgow Math. Journal* 63(2) (2021), 414-425.
- (5) *Automorphisms of Banach space projective tensor product of  $C^*$ -algebras*  
Ranjana Jain, *Arch. Math* 114 (6) (2020) 677-686.
- (6) *Independent point-set dominating sets in graphs*  
Purnima Gupta, Alka Goyal and Ranjana Jain. *AKCE International Journal of Graphs and Combinatorics*, 17 (1) (2020) 229-241.

- (7) *On Banach space projective tensor product of  $C^*$ -algebras*  
Ved Prakash Gupta and Ranjana Jain. *Banach J. Math. Anal.* 14 (2020) 524-538.
- (8) *On closed Lie ideals of certain tensor products of  $C^*$ -algebras II*  
Ved Prakash Gupta, Ranjana Jain and Bharat Talwar. *Math. Nachr.* 293 (1) (2020) 101-114
- (9) *On closed Lie ideals of certain tensor products of  $C^*$ -algebras*  
Ved Prakash Gupta and Ranjana Jain. *Math. Nachr.*, 291 (8-9), 2018,1297-1309.
- (10) *The operator space projective tensor product: Embedding into the second dual and ideal structure*  
Ranjana Jain and Ajay Kumar, *Proc. Edinburgh Math. Soc.* (2014) 57, 505-519.
- (11) *Spectral synthesis for the operator space projective tensor product of  $C^*$ -algebras.*  
Ranjana Jain and Ajay Kumar, *Bull. Malays. Math. Sci. Soc.*(2) 36(4) (2013), 855-864.
- (12) *Projective tensor product*  
Ranjana Jain and Ajay Kumar, Proc. 21st Annual Conference of Jammu Math. Soc. and a National Seminar on analysis and its applications, Feb 25-27, 2011, 27-40.
- (13) *Ideals of operator space projective tensor product of  $C^*$ -algebras.*  
Ranjana Jain and Ajay Kumar, *J. Aust. Math. Soc.* 91 (2011), 275-288.
- (14) *Operator Space Tensor Products of  $C^*$ -algebras.*  
Ranjana Jain and Ajay Kumar, *Math. Zeit.* 260 (2008), 805-811.

#### Grants/Scholarships/Awards:

- **Faculty Research Programme Grant- IoE, University of Delhi**  
2020-2021 on "A Study of Center and Closed Lie Ideals of Vector-Valued Beurling Algebras"
- **Research and Development Grant, University of Delhi**  
October, 2015- September, 2016 on 'Closed Lie ideals of spatial tensor product of von Neumann algebras'.
- **Research and Development Grant, University of Delhi**  
October, 2014- September, 2015 on "Closed Lie Ideals of Operator Space projective tensor Product of  $C^*$ -algebras".
- **Research Grant G.0231.07 under Research Foundation Flanders(FWO)**  
July, 2009 - July, 2010.  
(Availed at K. U. Leuven, Leuven, Belgium as an International Research Scholar)
- **UGC-CSIR Junior Research Fellowship**  
July, 2003 - November, 2005.
- **Gold Medalist in M.A. Mathematics**  
University of Delhi, 2003.

- **Mukharji Ram Behari Prize for highest score in M.A.**  
St. Stephen's College, 2003.
  - **55th IMS Annual Conference Scholarship**  
University of Delhi, July, 2001 - July, 2003.
  - **Kesar Devi Scholarship**  
St. Stephen's College, July, 2001 - July, 2003.
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**Workshops, Schools and Conferences attended:**

- **Conference on Groups and Operators**  
August 15-18, 2016, Chalmers Institute of Technology and University of Gothenburg, Gothenburg, Sweden.
  - **Conference on Indian Women and Mathematics**  
June 29-July 1, 2016, University of Hyderabad.
  - **Indian Science Congress**  
January 3-7, 2015, Mumbai University.
  - **Sympisoum on Young Women and Mathematics**  
July 25-27, 2014, IISER Pune.
  - **2nd Belgian Mathematical Society-London Mathematical Society Conference**  
December 4-December 5, 2009, K.U.Leuven, Leuven, Belgium.
  - **EU Review Meeting and Conference in Non Commutative Geometry**  
September 29-October 3, 2009, Copenhagen University, Copenhagen, Denmark.
  - **Compact Course in Multi-Norms and Multi-Banach Algebras**  
January 01-09, 2009, IISc, Bangalore, India.
  - **Pre-ICM International Conference**  
October 18-20, 2008, University of Delhi, Delhi, India.
  - **International Conference on Operator Theory and Related Areas**  
January 9-12, 2008, University of Delhi, Delhi, India.
  - **10th Discussion meeting on Harmonic Analysis**  
December 28, 2007 - January 1, 2008, IISc, Bangalore, India.
  - **National Workshop on Analysis**  
September 27-28, 2007, University of Delhi, Delhi, India.
  - **Workshop on Fractal Geometry**  
October 5-7, 2006, University of Delhi, Delhi, India.
  - **9th Discussion meeting on Harmonic Analysis**  
October 17-19, 2005, HRI, Allahabad, India.
  - **Annual Foundation School I**  
May 10 - June 5, 2004, IIT Bombay, Mumbai, India.
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**Seminars/Talks given:**

- *Title: Creating e-content using open source tools*  
Resource Person at Two-Week Faculty Development Programme on "Introduction and Working with Open Source Software-R" (Sponsored by PMMMNMTT, MHRD, Govt. of India), Kalindi College, University of Delhi, August 4, August 7, 2021.

- *Title: Linear algebra behind the web search*  
Invited Talk at the Webinar "Trisectrix", Sri Venkateswara College, University of Delhi, January 28, 2021.
- *Title: Research Methodology in Mathematics*  
Resource Person at MHRD Faculty Development Program, Kalindi College, University of Delhi, December 21, 2019.
- *Title: Lie ideals of certain tensor products of  $C^*$ -algebras*  
Invited talk at the Conference on "Topics in Analysis", Ashoka University, Sonapat, December 18-19, 2019.
- *Title: Mathematics behind Google*  
Invited Talk at the Annual fest of Hindu College, University of Delhi, February 20, 2019.
- *Title: Ideals vs Lie ideals in Banach algebras*  
Annual Conference of Ramanujan Mathematical Society, University of Delhi, June 1-3, 2018.
- *Title: The operator space projective tensor product: Embedding into bidual and its ideal structure*  
Conference on "Groups and Operators", August 15-18, 2016, Chalmers Institute of Technology and University of Gothenburg, Gothenburg, Sweden.
- *Title: Closed Lie ideals of certain operator algebras*  
Conference on "Indian Women and Mathematics", June 29-July 1, 2016, University of Hyderabad.
- *Title: On Certain Tensor Products of Operator Spaces*  
Invited Talk at Indian Science Congress, January 3-7, 2015, Mumbai University.
- *Title: Tensor Products of Operator Spaces*  
Young Women and Mathematics, July 25-27, 2014, IISER Pune.
- *Title: The Effros-Ruan Conjecture for Bilinear Forms on  $C^*$ -algebras*  
Operator Algebra Seminar, October 23, 2009, Department of Mathematics, K.U. Leuven, Belgium.
- *Title: Operator Space Projective Tensor Product of  $C^*$ -algebras*  
EU Review Meeting and Conference in Non Commutative Geometry  
September 29-October 3, 2009, Copenhagen University, Copenhagen, Denmark.
- *Title: Embedding Projective Tensor Product of  $C^*$ -algebras into Second Dual*  
Research Scholar Seminar, January 21-22, 2009, University of Delhi, Delhi.
- *Title: Ideal Structure of Operator Space Projective Tensor Product of  $C^*$ -algebras*  
Research Scholar Seminar, April, 2008, University of Delhi, Delhi.
- *Title: Ideal Structure of Operator Space Projective Tensor Product of  $C^*$ -algebras*  
International Conference on Operator Theory and Related Areas.  
January 9-12, 2008, University of Delhi, Delhi.

#### Membership of Learned Bodies:

- Life membership of Indian Science Congress Association (Membership No.: L28033)

- Life membership of Ramanujan Mathematical Society (Membership No.: 1184)
  - Life membership of Indian Mathematical Society (Membership No.: L/2015/88)
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**Teaching Experience:**

- Assistant Professor, Department of Mathematics, University of Delhi.  
March, 2014 - present.
  - Assistant Professor, Department of Mathematics, Lady Shri Ram College for Women, University of Delhi.  
July, 2006 - March, 2014.
  - Lecturer (Temporary), Department of Mathematics, Sri Venkateswara College, University of Delhi.  
November, 2005 - July, 2006
  - Lecturer (Ad-hoc), Department of Mathematics, Ramjas College, University of Delhi.  
November, 2004 - November, 2005
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**Courses Taught:**

- Ph.D./M.Phil Level: Research Methodology
  - Post-Graduate Level: Measure and integration, Topology, Functional Analysis, Module Theory, Matrix Analysis, Abstract Harmonic Analysis.
  - Under-Graduate Level: Complex analysis, Algebra, Real Analysis, Calculus, Differential Equations, Mechanics
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