Curriculum Vitae

Dr. Mandeep Singh
Ph.D, BITS Pilani

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Educational Qualifications:
- **Ph.D. (2016) :** Department of Mathematics, BITS Pilani, Pilani Campus-333031, INDIA.
- **Title of the Thesis :** Monotone Iterative Techniques for a Class of Nonlinear Boundary Value Problems.

Awards and Fellowships:
- Qualified Graduate Aptitude Test for Engineering (GATE) Maths- 2012 & 2013.
- Awarded Junior Research Fellowship from UGC-BSR: Feb 2013 – Jan 2015.

Teaching Experience:
- Lecturer: Tula's Institute of Technology, Dehradun, Uttarakhand, August 2008 to July 2009.
- Lecturer: Quantum School of Technology Roorkee, Uttarakhand, July 2009 to July 2011.
- Assistant Professor: DIT University, Dehradun, Uttarakhand , June 2016 to Dec 2017.

Research Interests:
- Existence and Uniqueness of Nonlinear Boundary Value Problems .
- Numerical Solution of Nonlinear Boundary Value Problems.
- Three Point Boundary Value Problems.
- Monotone Iterative Technique.
- Haar Wavelets.

List of Publications:

1. *Mandeep Singh* and Amit K. Verma, On a monotone iterative method for a class of three point nonlinear nonsingular BVPs with upper and lower solutions in reverse order, *Journal of Applied Mathematics and Computing (Springer)*, 43, (2013), 99–114.

2. *Mandeep Singh* and Amit K. Verma, [Invited Article] Picard type iterative scheme with initial iterates in reverse order for a class of nonlinear three point BVPs, *International Journal of Differential Equation (Hindawi)*, Volume 2013, (2013), Article ID 728149, 6 pages.

3. Amit K. Verma and *Mandeep Singh*, Existence of solutions for three-point BVPs arising in bridge design, *Electronic Journal of Differential Equation*, Vol. 2014, (2014), No. 173, pp. 1-11, ISSN: 1072-6691, Published from Department of Mathematics, Texas State University-San Marcos, USA.

4. Amit K. Verma and *Mandeep Singh*, Maximum principle and nonlinear three point singular boundary value problems arising due to spherical symmetry, *Communications in Applied Analysis*. An International Journal for Theory and Applications, 19, (2015), 175–190.

5. *Mandeep Singh*, Amit K. Verma and Ravi P. Agarwal, Maximum and anti-maximum principles for three point SBVPs and nonlinear three point SBVPs, *Journal of Applied Mathematics and Computing (Springer)*, 47, (2015), 249-263.

6. Amit K. Verma and *Mandeep Singh*, Singular nonlinear three point BVPs arising in thermal explosion in a cylindrical reactor, *Journal of Mathematical Chemistry(Springer)*, 53, (2015), 670-684.

7. Amit K. Verma and *Mandeep Singh*, A note on existence results for a class of three-point nonlinear BVPs, *Mathematical Modelling and Analysis (Taylor & Francis Journal)*, 20 (4), (2015), 457-470.

8. *Mandeep Singh* and Amit K. Verma, An effective computational technique for a class of Lane-Emden equations, *Journal of Mathematical Chemistry (Springer)*, 54, (2016), 231–251.

9. *Mandeep Singh* and Amit K. Verma, Nonlinear three point Singular BVPs : A Classification, *Communications in Applied Analysis*, Volume 21(4), (2017), 513-532.

10. *Mandeep Singh*, Amit Kumar Verma and Ravi P. Agarwal, On an Iterative method for a class of 2 point & 3 point nonlinear SBVPs, *Journal of Applied Analysis and Computation***, 9 (4), (2019), 1242-1260.

11. Amit K. Verma, NaziaUrus and *Mandeep Singh*, Monotone iterative technique for a class of four point BVPs with reversed ordered upper and lower solutions, *International Journal of Computational Methods*, Vol. 17, No. 09, 1950066 (2020). DOI: 10.1142/S021987621950066X.

12. Amit K. Verma, *Mandeep Singh* and Ravi P. Agarwal, Regions of existence for a class of nonlinear diffusion type problems, *Applicable Analysis and Discrete Mathematics*, 14, (2020), 106-121.

13. Sawti, Karanjeet Singh, Amit K. Verma, and *Mandeep Singh*, Higher order Emden-Fowler type equations via Uniform Haar Wavelet resolution technique, *Journal of Computational and Applied Mathematics (Elsevier)*, 376, (2020), 112836.

14. Amit K. Verma, Narendra Kumar, *Mandeep Singh* and Ravi P. Agarwal, A note on variation iteration method with an application on Lane-Emden equations, *Engineering Computations,(Emerald)*, 38(10), (2021) 3932-3943.

15. Swati, *Mandeep Singh* and Karanjeet Singh, Uniform Haar wavelet technique with Newton's method for a kind of derivative dependent SBVPs, *Journal of Mathematical Chemistry,* 59**, (2021), 1610–1637.

16. Swati, *Mandeep Singh* and Karanjeet Singh, An advancement approach of Haar wavelet method and Bratu-type equations, *Applied Numerical Mathematics (Elsevier),* 170, (2021), 74-82.

17. Mandeep Singh, Nazia Urus, Amit K. Verma, A different monotone iterative technique for a class of nonlinear three-point BVPs, *Computational and Applied Mathematics*, *40, 262 (2021).*

International Conference Proceeding

1. Swati, Karanjeet Singh, and *Mandeep Singh*, Uniform Haar wavelet collocation method for three-point boundary value problems, *AIP Conference Proceedings* 2214, 020015 (2020); https://doi.org/10.1063/5.0003539.

National Journal

1. Nazia Urus, Amit K. Verma, *Mandeep Singh*, Some New Existence Results for a Class of Four Point Nonlinear Boundary Value Problems, JNPG-The Journal of Revelations, Vol. 3 (1), 7-13, 2018.

Papers presented in conferences:

- "*New Existence Results for Nonlinear Three Point Singular Boundary Value Problems Arising due to Spherical Symmetry*" International Conference on Advances in Mathematical Sciences-2015, **Department of mathematics**, **Khalsa College, Patiala Punjab**, March 19-21.

- "*Existence results for a class of nonlinear three point singular boundary value problems*" South Asian Mathematics Research Scholars Meet- 2015, **South Asian University**, AkabarBhawan , Chanakyapuri, **New Delhi-110021**.

- "*Classification of Well Order and Reverse Order Cases for a Class of Nonlinear Three Point BVPs*" International Conference on Recent Advances in Mathematical Biology, Analysis and Applications-**ICMBAA-2015**, June 4-6, 2015, **Department of Applied Mathematics**, **Aligarh Muslim University**, Aligarh 202 002, India.

Conferences/workshops participated:

- National conference on "Modeling, Computational Fluid Dynamics & Operations Research" Department of Mathematics, Birla Institute of Technology & Science-Pilani Campus, Pilani, Rajasthan, February 4 – 5, 2012.
- "National workshop on Modeling & Computation", Department of Mathematics, Birla Institute of Technology & Science-Pilani Campus, Pilani, Rajasthan, February 23 – 24, 2013.
- National conference on "Recent Trend and Developments in Operations Research", Department of Mathematics, Birla Institute of Technology & Science-Pilani Campus, Pilani, Rajasthan, February 22-23, 2014.
- National worksop on "LATEX and MATLAB for beginners "Department of Mathematics, Birla Institute of Technology & Science-Pilani Campus, Pilani, Rajasthan, December 24 – 28, 2014.
- E-Workshop on Stochastic Modeling, Optimization and Soft Computing" ,Department of Mathematics and Statistics, Manipal University Jaipur,August 10-14.08. 2020.
- Digital International Conference on Inventory Modeling, (DICIM) 22-23.08.2020, Department of Mathematics, Gujarat University, Ahmadabad, Gujarat, India.

Faculty Development Programs
- "Recent Trends on Machine Learning for Signal Processing (RTMLS)", Organized by the Dept. of Electronics & Communication Engineering. JUIT, Waknaghat, Solan, HP, during May 20-25, 2019.
- Faculty Development Programme on Applicability of Mathematics sciences in Emerging World, 28.07.2020-02.08.2020, Invertis University, Bareilly
- e-FDP on "Applied Mathematics and Related Fields",Department of Mathematics, GLA University, Mathura, 24th to 29th August, 2020.
- One Week Online Faculty Development Program on, "Futuristic Trends in Energy, Material and Manufacturing Technology" Orgnized by Hindustan College of Science & Technology, Mathura from 02-08-2021 to 06-08-2021.

Membership **of Professional Bodies/ National/ International Committees:**
1. Ramanujan Mathematical Society, Tiruchirapalli (Membership No.-1374), Life Membership.
2. Indian Mathematical Society, Pune (Membership No.-L/2019/5) Life Membership.
3. Scientific and Technical Research Association (STRA),(Membership ID-STRA-M19626), Life Membership.