




## CV of Ms. Gunjan Khurana

<b>Title</b>	<b>Dr.</b>	<b>First Name</b>	<b>Gunjan</b>	<b>Last Name</b>	<b>Khurana</b>	<b>Photograph</b>
						
<b>Designation</b>		<b>Assistant Professor</b>				
<b>Address</b>		<b>Staff Quarter G-2, I.P. College for Women, 31, Sham Nath Marg, Delhi-54</b>				
<b>Phone No Office</b>		<b>011-23962009</b>				
<b>Mobile</b>		9891281984, 8076877032				
<b>Email</b>		<a href="mailto:gunjanfirstseptember@gmail.com">gunjanfirstseptember@gmail.com</a>				
<b>Educational Qualifications</b>						
<b>Degree</b>	<b>Institution</b>	<b>Marks obtained</b>	<b>Year</b>			
PhD	<b>South Asian University, New Delhi</b>		<b>2018</b>			
M.Phil.	<b>University of Delhi</b>	<b>83.4</b>	<b>2009</b>			
M.A. Mathematics	<b>University of Delhi</b>	<b>91.125</b>	<b>2007</b>			
B.Sc.(H) Mathematics	<b>University of Delhi</b>	<b>90.55</b>	<b>2005</b>			
<b>Career Profile</b>						
Jesus and Mary College	<b>16.07.08-29.01.09</b>	<b>Worked as Assistant Professor(ad-hoc)</b>				
Maitreyi College	<b>29.02.09-06.09.10</b>	<b>Worked as Assistant Professor(temporary and ad-hoc)</b>				
I.P. College	<b>06.09.2010-present</b>	<b>Working as Assistant Professor(permanent)</b>				
<b>Administrative Assignments</b>						<b>Year</b>

<ol style="list-style-type: none"> <li>1. Teacher-in-charge(Maths Department)</li> <li>2. NCC Convenor</li> <li>3. Fine Arts Society Advisor</li> <li>4. Association-in- charge of Mathematics Department</li> <li>5. Representative of B.A. (Program) Committee from Maths Deptt</li> <li>6. Garden-in Charge</li> <li>7. Time Table Convenor of Maths Deptt.</li> </ol>	2012-14 2014-15 2104-15 2014-15 From Nov 2018 July 2018 onwards July 2019 onwards
Areas of Interest / Specialization	
Numerical Analysis and Partial Differential Equations, Algebra, Analysis.	
<b>Subjects Taught</b>	
<b>Algebra, Differential Equations, Probability, Analysis, Graph Theory , Numerical Analysis etc.</b>	
<b>Research Guidance</b>	
Worked under the guidance of Prof. R.K. Mohanty in the topic Numerical techniques to find approximate solutions of mildly non-linear partial differential equations.	
<b>Publications</b>	
Mohanty, R. K. , Manchanda ,Geetan, <b>Khurana, Gunjan</b> and Khan , Arshad (2020): A new third order exponentially fitted discretization for the solution of non-linear two point boundary value problem on a graded , <i>Journal of Applied Analysis and Computation</i> (to appear) . <b>[Publisher – Wilmington Scientific and Francis, Impact Factor: 1.116 ]</b>	
Mohanty, R. K. , Manchanda ,Geetan, Khan , Arshad and <b>Khurana, Gunjan</b> (2020): A new high accuracy method in exponential form based on off-step discretization for non-linear two point boundary value problems, <i>Journal of Difference Equations and Applications</i> , <a href="https://doi.org/10.1080/10236198.2019.1710140">https://doi.org/10.1080/10236198.2019.1710140</a> . <b>[Publisher – Taylor and Francis, Impact Factor:0.974]</b>	
Mohanty, R. K . and <b>Khurana, Gunjan</b> (2019). A new high accuracy cubic spline method based on half-step discretization for the system of 1D non-linear wave equations. <i>Engineering Computations</i> , doi number:10.1108/EC-04-2018-0194. <b>[Publisher – Emerald, Impact Factor:1.246]</b>	
Mohanty, R. K . and <b>Khurana, Gunjan</b> (2018). A New Fast Algorithm Based on half-Step Discretization for Three-Dimensional Quasilinear Hyperbolic Partial Differential Equations. <i>Int. J. Comput. Methods</i> , Vol. 15, ID: 1850090 <b>[Publisher – World Scientific, Impact Factor:1.221]</b>	
Mohanty, R. K. and <b>Khurana, Gunjan</b> (2017). A New Spline in Tension method of $O(k^2+h^4)$ based on off for the step grid points for the Solution of 1D Quasi-linear Hyperbolic Partial Differential Equations. <i>Differ. Equ. Dyn. Sys.</i> 10.1007/s12591-017-0391-5, 2017, ID:97 <b>[Publisher – Springer]</b>	

Mohanty, R. K. and **Khurana, Gunjan** (2017). A New Spline in Compression Method of Order Four in Space and Two in Time Based on Half-step Grid Points for the Solution of the System of 1D Quasi-linear Hyperbolic Partial Differential Equations, . *Adv. Difference Equ.*, 2017, ID:97 . **[Publisher – Springer, Impact Factor:1.510]**

Mohanty, R. K . and **Khurana, Gunjan** (2017). A New Fast Numerical Method Based on Off-Step Discretization for Two-Dimensional Quasilinear Hyperbolic Partial Differential Equations. *Int. J. Comput. Methods*, 14, ID: 1750031. **[Publisher – World Scientific, Impact Factor:1.221]**

**Khurana, Gunjan** and Mohanty, R. K.(2016) A New Spline in Compression Technique of Order Four in Space and Order two in Time for the Solution of 1D Wave Equation in Polar Coordinates. *International Workshop on Computational Intelligence(IWCI), IEEE*

Mohanty, R. K and **Khurana, Gunjan**(2016). A class of methods for the numerical solutions of 3D multi-harmonic elliptic equations on a graded mesh, *Neural Parallel Sci. Comput.*24, no. 4, 504-521. **[Publisher – Dynamic]**

## Conferences and Workshops

- Attended Visiting Students Study Program held at Harish Chandra Research Institute, Allahabad from 5<sup>th</sup> -23<sup>rd</sup> June, 2006.
- Attended National Workshop on Analysis held at the Department of Mathematics, University of Delhi, during 27<sup>th</sup> -28<sup>th</sup> September, 2007.
- Attended International Conference on Operator Theory and Related Areas held at the Department of Mathematics, University of Delhi, during 9<sup>th</sup> -12<sup>th</sup> January, 2008.
- Attended a Training Course on Programming in C conducted by Delhi University Computer Centre, during 5<sup>th</sup> - 16<sup>th</sup> May, 2008.
- Attended Advanced Training in Mathematics for Lecturers in Complex Analysis held at the Department of Mathematics, University of Delhi, during 16<sup>th</sup> March -4<sup>th</sup> April, 2009.
- Participated in the ICT Workshop for Capacity Building of Delhi University Staff, during 1<sup>st</sup> -11<sup>th</sup> December, 2009.
- Attended National Meet on History of Mathematical Sciences held at University of Delhi, during 7<sup>th</sup>-9<sup>th</sup> January, 2010.
- Attended National Workshop sponsored by UGC on Quality Assurance Through Blended Learning in Maitreyi College, University of Delhi from 19<sup>th</sup> -21<sup>st</sup> January, 2010
- Attended and conducted tutorials in Advanced Training in Mathematics for Lecturers in Real Analysis held at the Department of Mathematics, University of Delhi, during 22<sup>nd</sup> March -3<sup>rd</sup> April, 2010.
- Attended and conducted tutorials in Advanced Training in Mathematics for Lecturers in Geometric Complex Analysis held at the Department of Mathematics, University of Delhi, during 21<sup>nd</sup> March -2<sup>rd</sup> April, 2011.
- Attended Advanced Training in Mathematics for Lecturers in Group Theory held at the Department of Mathematics, University of Delhi, during 3<sup>rd</sup> - 15<sup>th</sup> June, 2013.
- Attended National Program on Differential Equations: Theory, Computation and Applications(NPDE-TCA)organized by Indian Institute of Technology, Bombay and Ropar , India, during 16<sup>th</sup> May-4<sup>th</sup> June, 2016.
- Attended Science Academies Lecture Workshop on ‘Groups in Geometry and Applications’ organized by Maitreyi College, University of Delhi , during 13<sup>th</sup>-15<sup>th</sup> October, 2016.
- Attended Short Term Course on Complex Analysis, Fourier Analysis and Special Functions (with outline on Mathematical Software Techniques), organized by IIT, Roorkee , during 6<sup>th</sup> - 10<sup>th</sup> , March, 2017 under

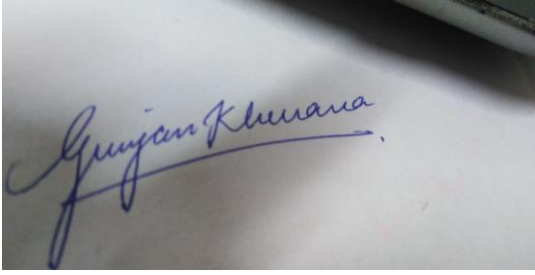
TEQIP – II  
Sponsorship.

- Attended Faculty enrichment workshop, One day workshop on R software , Janki Devi Memorial, 15<sup>th</sup> January, 2019.
- Teacher enrichment Workshop, TEW-2019: Algebra and its Applications, Shivaji College, TIFR, 6<sup>th</sup>-11<sup>th</sup> May, 2019.
- Completed Orientation Program : OR-96 organised by CPDHE, University of Delhi, 31May to 21 June 2019

## Paper Presentations

Title of Paper	Name of conference, Place	Dates
Class of Methods for Numerical Solutions of 2D Multi-Harmonic Elliptic Equations on a Non-Uniform Mesh”	International Conference on Differential Geometry, Algebra and Analysis, Jamia Milia Islamia University, New Delhi, India	15-17 November, 2016
A New Spline in Compression Method of Order Four in Space and Two in Time for Solution of 1D Quasi-Linear Hyperbolic Equations	International Conference on Recent Advances in Theoretical and Computational PDEs with Application, Punjab University, Chandigarh, India	5-9 December, 2016
A New Spline in Compression Method of Order Four in Space and Two in Time for Solution of 1D Wave Equation in Polar Coordinates”	International Workshop on Computational Intelligence, Department of Computer Science and Engineering, Jahangirnagar University, Dhaka, Bangladesh	12-13 December, 2016
A New Spline in Tension Method of Order Four in Space and Two in Time for Solution of 1D Quasi-Linear Hyperbolic Equations”	International Conference on Interdisciplinary Mathematics, Statistics and Computational Techniques, Manipal University, Jaipur, India	22-24 December, 2016
Numerical methods of order two and three for the solution of Poisson's equation and their application to bi- and tri-harmonic problems on a graded mesh.	International Conference on Mathematics and Applications at Ramjas College, University of Delhi, India	26-28 April, 2017
A new high accuracy off step cubic spline method for 1-D quasi-linear hyperbolic equations	International Conference on Recent advances in PDE: Theory, Computations and Applications, IIT Bombay, India	8-10 June, 2017
A new high accuracy numerical method based on polynomial cubic spline approximations for the system of 1D quasi-linear hyperbolic equations.	International Conference on Mathematical Modelling, Applied Analysis and Computation, JECRC University, Jaipur, India	6-8 July, 2018
Stability Analysis of a New Fast Algorithm	International Conference on Advances in Computational	22-23 Dec., 2018

Based on Half-Step Discretization for 3D Damped Wave Equation	Mathematics(ICACM-2018)	
Stability Analysis of a New Fast Algorithm Based on Half –Step Discretization for 2D Damped Wave Equation	Fourth International Conference on Recent Developments in Theory, Computation and Applications of Differential Equations	21-23 Jan., 2019
<b>Awards and Distinctions</b>		
<ul style="list-style-type: none"> <li>• Chaired a session in International Conference on Advances in Computational Mathematics(ICACM-2018) ,Tribhuvan University, Kathmandu, Nepal, 23<sup>rd</sup> Dec., 2018</li> <li>• Cleared CSIR NET, JRF in December 2006.</li> <li>• Awarded M.A./M.Sc. Scholarship of National Board for Higher Mathematics in the year 2006-07 .</li> <li>• All India GATE 2007 Rank 41.</li> <li>• All India Rank 70 in Joint Admission Test to M.Sc., 2005(IIT)</li> <li>• <b>University Topper in MA/MSc. Mathematics.</b></li> <li>• <b>University of Delhi (South Campus)Topper in BA(Hons.)Mathematics.</b></li> <li>• Awarded <b>three Gold medals</b> at the 85th convocation, University of Delhi, 2008. <ul style="list-style-type: none"> <li>i. J.N.Mitra Memorial Medal for being the best candidate in the M.A./M.Sc. Statistics and M.Sc.Physics Examinations taken together held in 2007.</li> <li>ii. Professor Ram Behari Medal for being the best candidate in the M.A. and M.Sc. Examinations held in 2007.</li> <li>iii. Smt.Sivakama Radhakrishnan Medal for being the best women candidate in the M.A. Examinations held in 2007.</li> </ul> </li> <li>• Awarded certificate and prize by Kirori Mal College for standing 1st in the University of Delhi in M.A.(Prev.) Mathematics Examination, 2006 and M.A. Mathematics Examination, 2007.</li> <li>• Awarded B.Savitri Memorial Prize for securing 1<sup>st</sup> position in University of Delhi, South Campus in B.A.(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded an Academic prize for securing 1<sup>st</sup> position in University of Delhi, South Campus in B.A(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded Sri Sundara Ayyar and Alamelu Memorial Medal prize for standing 1<sup>st</sup> in University of Delhi, South Campus in B.A(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded Smt.V.Suvarchalamba Memorial Medal prize for standing 1<sup>st</sup> in University of Delhi, South Campus in B.A(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded Students Union Merit Medal prize for standing 1<sup>st</sup> in University of Delhi, South Campus in B.A(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded Balaji Gold Medal for standing 1<sup>st</sup> in University of Delhi, South Campus in B.A(H) Maths 3<sup>rd</sup> year, 2004-05.</li> <li>• Awarded an Academic prize for securing 1<sup>st</sup> position in University of Delhi, South Campus in B.A(H) Maths 2<sup>nd</sup> year, 2003-04.</li> <li>• Awarded Seema Katyal Memorial prize for securing 1<sup>st</sup> position in University of Delhi, South Campus in B.A(H) Maths 2<sup>nd</sup> year, 2003-04.</li> <li>• Awarded an Academic prize for securing 2<sup>nd</sup> position in University of Delhi, South Campus in B.A(H) Maths 1<sup>st</sup> year, 2002-03.</li> <li>• Awarded Lord Venkateswara merit prize for highest marks in other than Science streams in the college in B.A(H) Maths 1<sup>st</sup> year, 2002-03.</li> </ul>		

A close-up photograph of a handwritten signature in blue ink on a white surface. The signature is written in a cursive style and appears to read "Gurjinder Kaur". A horizontal line is drawn under the signature.

**Signature**