

DR. BRIJ MOHAN

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DOB: 01 January 1984

Key Skills and Technologies

C/C++, Mathematica, Maple, Matlab, R, Python, Maxima, NTL, Linux, HTML, Latex, PowerBI, and ChatGPT

Qualifications

- **Doctor of Philosophy (Ph.D.)** in Mathematics, University of Delhi (DU), Delhi, India, 2026.
- **Master of Technology (M.Tech.)** in Computer Applications, Indian Institute of Technology (IIT), Delhi, India, 2009.
- **Master of Science (M.Sc.)** in Mathematics, Chaudhary Charan Singh University (CCSU), Meerut, Uttar Pradesh, India, 2006.
- **Bachelor of Science (B.Sc.)** in Mathematics, NAS College, Chaudhary Charan Singh University (CCSU), Meerut, Uttar Pradesh, India, 2004.

Certificates:

- **CS50: Introduction to Computer Science**, Harvard University (HU), US at edx.org, 2021.
- **Introduction to R, Power BI, ChatGPT, and Data Science R Basics** at www.datacamp.com, 2023.

Employment History

- Assistant Professor at **Hansraj College, University of Delhi**, India, July 2013-Present
- Assistant Professor at **Keshav Mahavidyalaya, University of Delhi**, India, July 2011-July 2013.
- Assistant Professor at **Kalindi College, University of Delhi**, India, July 2009 – June 2011.
- Guest lecturer for *Operational Research* at **Bhaskaracharya College, University of Delhi**, 2012-2013.
- Guest lecturer for *Numerical Methods* at **Dayal Singh College, University of Delhi**, 2011-2012.
- Guest lecturer for *Numerical Methods* at **PGDAV College (Evening), University of Delhi**, 2011-2012.

Awards and Achievements

- **Top Cited Paper Award 2025** in Mathematical and Computational Science, IOP Publishing.
- **Top Cited Paper Award 2025** in Physics, IOP Publishing.
- Qualified **GATE** (Graduate Aptitude Test in Engineering) in Computer Science in 2018.
- Qualified **NET-CSIR** (National Eligibility Test) with **JRF** (Junior Research Fellowship) in Mathematics in 2007.
- Qualified **GATE** in Mathematics in 2007.
- Qualified **SET** (Scientist Entry Test) by DRDO for Scientist-B in 2006.

Research Projects

- Innovation Project: HR-304 - **“Study and Security Analysis of Smart Cards”** sponsored by the University of Delhi during 2015-2016. (Major– 5 Lakh Rupees)

Research Profiles

- [SCOPUS](#)
- [Google Scholar](#)
- [Web of Science](#)
- [Research Gate](#)

Citations: 869

h-index: 15

i10-index: 15

Publications: 15 (SCIE-14, Scopus-1)

- **Brij Mohan**, Sachin Kumar, Raj Kumar (2025) On investigation of kink-solitons and rogue waves to a new integrable (3+1)-dimensional KdV-type generalized equation in nonlinear sciences, *Nonlinear Dynamics*, (SCI/IF: 5.6) **(Q1)**, <https://doi.org/10.1007/s11071-024-10792-8>
- **Brij Mohan**, Sachin Kumar, (2025) Painleve analysis, restricted bright-dark N-solitons, and N-rogue waves of a (4+1)-dimensional variable-coefficient generalized KP equation in nonlinear sciences, *Nonlinear Dynamics*, 112:11373-11382, (SCI/IF: 5.6), **(Q1)**, <https://doi.org/10.1007/s11071-024-10645-4>
- **Brij Mohan**, Sachin Kumar, (2024) Rogue-wave structures for a generalized (3+1)-dimensional nonlinear wave equation in liquid with gas bubbles, *Physica Scripta*, 99:105291, (SCI/IF: 2.6), **(Q2)**, <https://doi.org/10.1088/1402-4896/ad7cd9>
- **Brij Mohan**, Sachin Kumar, (2024) Generalization and analytic exploration of soliton solutions for nonlinear evolution equations via a novel symbolic approach in fluids and nonlinear sciences, *Chinese Journal of Physics*, 92:10-21, (SCI/IF: 4.6), **(Q2)**, <https://doi.org/10.1016/j.cjph.2024.09.004>
- Sachin Kumar, **Brij Mohan**, (2024) Bilinearization and new center-controlled N-rogue solutions to a (3+1)-dimensional generalized KdV-type equation in plasmas via direct symbolic approach, *Nonlinear Dynamics*, **(Q1)**, <https://doi.org/10.1007/s11071-024-09626-4>
- **Brij Mohan**, Sachin Kumar, Raj Kumar, (2023) *Higher-order rogue waves and dispersive solitons of a novel P-type (3+1)-D evolution equation in soliton theory and nonlinear waves*, *Nonlinear Dynamics*, 111:20275–20288, (SCI/IF: 5.6) **(Q1)**, <https://doi.org/10.1007/s11071-023-08938-1>
- Sachin Kumar, **Brij Mohan**, (2023) *A novel analysis of Cole–Hopf transformations in different dimensions, solitons, and rogue waves for a (2 + 1)-dimensional shallow water wave equation of ion-acoustic waves in plasmas*, *Physics of Fluids*, 35:127128, (SCI/IF: 4.6), **(Q1)**, <https://doi.org/10.1063/5.0185772>
- Sachin Kumar, **Brij Mohan**, (2023) *Newly formed center-controlled rogue wave and lump solutions of a generalized (3+1)-dimensional KdV-BBM equation via symbolic computation approach*, *Physica Scripta*, 98(8):085237, (SCI/IF: 3.081), **(Q2)**, <https://doi.org/10.1088/1402-4896/ace862>
- Sachin Kumar, **Brij Mohan**, (2023) *A direct symbolic computation of center-controlled rogue waves to a new Painlevé-integrable (3+1)-D generalized nonlinear evolution equation in plasmas*, *Nonlinear Dynamics*, 111:16395–16405, (SCI/IF: 5.741), **(Q1)** <https://doi.org/10.1007/s11071-023-08683-5>
- Sachin Kumar, Amit Kumar, **Brij Mohan** (2023) *Evolutionary dynamics of solitary wave profiles and abundant analytical solutions to a (3+1)-dimensional burgers system in ocean physics and hydrodynamics*, *Journal of Ocean Engineering and Science*, 8(1):1-14,(SCI/IF:7.1), **(Q1)**, <https://doi.org/10.1016/j.joes.2021.11.002>
- Sachin Kumar, **Brij Mohan** (2022) *A generalized nonlinear fifth-order KdV-type equation with multiple soliton solutions: Painlevé analysis and Hirota Bilinear technique*, *Physica Scripta*, 97(12):125214, (SCI/IF: 3.081), **(Q2)**<https://doi.org/10.1088/1402-4896/aca2fa>
- **Brij Mohan**, Dasharath Meena (2022) *Application of Hirota’s Direct Method to Nonlinear Partial Differential Equations: Bilinear Form and Soliton Solutions*, *Hans Shodh Sudha*, 3(2):31-38, <https://www.hansshodhsudha.com/volume3-issue2/manuscript%203.pdf>
- Sachin Kumar, **Brij Mohan**, Raj Kumar (2022) *Lump, soliton, and interaction solutions to a generalized two-mode higher-order nonlinear evolution equation in plasma physics*, *Nonlinear Dynamics*, 110:693-704, (SCI/IF: 5.741), **(Q1)**, <https://doi.org/10.1007/s11071-022-07647-5>
- Sachin Kumar, **Brij Mohan**, Amit Kumar (2022) *Generalized fifth-order nonlinear evolution equation for the Sawada-Kotera, Lax, and Caudrey-Dodd-Gibbon equations in plasma physics: Painlevé analysis and multi-soliton solutions*, *Physica Scripta*, 97(3):035201, (SCI/IF:3.081), **(Q2)**, <https://doi.org/10.1088/1402-4896/ac4f9d>
- Sachin Kumar, **Brij Mohan** (2022) *A novel and efficient method for obtaining Hirota’s bilinear form for the nonlinear evolution equation in (n+1) dimensions*, *Partial Differential Equations in Applied Mathematics*, 5:100274, **(Scopus)** <https://doi.org/10.1016/j.padiff.2022.100274>

- Sachin Kumar, **Brij Mohan** (2021) *A study of multi-soliton solutions, breather, lumps, and their interactions for Kadomtsev-Petviashvili equation with variable time coefficient using Hirota method*, Physica Scripta, 96(12):125255, (SCI/IF: 3.081), (Q2), <https://doi.org/10.1088/1402-4896/ac3879>

Papers/Posters Presented

- At **13th International Conference of IASC-ASR 2025**, Ho Chi Minh City, Vietnam, December 4-6, 2025
- At **International Conference on Nonlinear Analysis and Applications**, Rishikesh, UK, May 10-12, 2024
- At **International Conference on Advances in Pure and Applied Mathematics**, Delhi, Feb 08-10, 2024
- At **6th International Conference FIAM-2023**, DUBAI, UAE, December 21-22, 2023.
- At **National Education Conclave: India's Future and Higher Education**, Delhi, March 23-24, 2023.

Professional Services

- **Maple Software Trainer** at Binary Semantics Pvt. Ltd., for North India Region.
- **Reviewer for Journals:**
Nonlinear Dynamics (Springer), Chaos, Soliton & Fractals (Elsevier), Physics of Fluids (American Institute of Physics-AIP), Physica Scripta (Institute of Physics-IOP-Science), Mathematics (MDPI), Partial Differential Equations in Applied Mathematics (Elsevier), Nonautonomous Dynamical Systems (De Gruyter), Modern Physics Letters B (World Scientific).

Invited Talks

- On **"Maple: A scientific computational tool for Research and Academics"** in Short Term Programme on Applications of Computational Software in Mathematical Sciences and Engineering at Central University of Haryana, Mahendergarh, Haryana, India, on May 20, 2025.
- On **"Mathematica"** in the Capacity Building Workshop at Miranda House, University of Delhi, New Delhi, India, on April 04-05, 2025.
- On **"Mathematical Python"** in the One-Day Hands-On Training Program at ARSD College, University of Delhi, New Delhi, India, on March 20, 2025.
- On **"Riding the waves: Exploring the exciting world of water waves"** at Atal Tinkering Lab (ATL) Community Day, SD Public School, Pitampura, ATL @ Atal Innovation Mission (AIM) by NITI Aayog, Government of India, April 20, 2024.
- On **"Numerical Optimization: Techniques and Applications"** in National Workshop on Numerical Optimization and its Future Perspectives at DDU College, University of Delhi, on March 12 – 16, 2024.
- On **"Prompting AI tools and Writing,"** in a One-week workshop: ICT tools and Artificial Intelligence, organized by Malviya Mission Center, UGC, Ministry of Education, Govt. of India, January 8-12, 2024.
- On **"Using Mathematica as a Scientific tool in Teaching and Research"**, for FDP: Interdisciplinary Learning in Department of Applied Sciences, Maharaja Agrasen Institute of Technology, Rohini, Delhi on August 9, 2023.
- On **"Latex"** in a two-day workshop organized by Operation Research Society of India (ORSI): Meerut chapter & Vardhman College, Bijnor, UP on February 25-26, 2023.
- On **"Coding in Mathematics"** in a 3-day workshop organized by DIET, Keshavpuram, Delhi on 3-6 October 2022.
- On **"Mathematica - A System for Modern Technical Computing"** for FDP organized by MHFDC, Hansraj College, DU on August 21-26, 2020.
- On **"Managing Online Classes: Teaching Learning Tools and e-Content Generation"** for FDP organized by Bharti College, DU on August 17-22, 2020.
- On **"Microsoft Teams"** for the faculty members of Hansraj College, organized by MHFDC, Hansraj College, DU on August 9, 2020.
- On **"Applications of Computer Algebra System - Mathematica"** in a One-day Workshop organized by MMH College, Ghaziabad, UP, on September 29, 2018.
- On **"Mathematica: A Tool for Computational Analysis"** in the Faculty Development Programme, organized by the Department of Mathematics, Hansraj College, University of Delhi, on March 10-11, 2018.
- On **"Digital Literacy: An Introduction to ICT Skills"** in the Faculty Development Programme, organized by the Department of Physics & Electronics, Hansraj College, University of Delhi, on September 15-17, 2017.
- On **"Understanding Interrelations between the Topics of Mathematics"** & "Importance of Prime Numbers & their Utilization in the Modern Era" in TGT Teachers Training, Bal Bharti Public School, Pitumpura, on 23rd May and 26th May, 2017.

- On “**Latex & Website Designing**” in National Workshop, organized by the Department of Mathematics, Shaheed Bhagat Singh College, University of Delhi on August 11-12, 2016.
- On “**Illustration through Intuitive Examples**” in Workshop on Foundation Course, at Cluster Innovation Centre, University of Delhi on July 15, 2013.

Workshops, Conferences, FDPs Talks (Organized)

- **2nd International Conference on Recent Trends in Mathematics**, at Hansraj College, on 7th-8th February, 2025.
- Seminar on “**Annual Academic Meet: Shri Shanti Narayan Mathematics Conclave-2021**” of the Department of Mathematics, Hansraj College, on March 7-8, 2021.
- Workshop on “**How to plan projects: Investigatory approach to learning and hands-on experience with 3M’s-Maple, Mathematica and Matlab**” in Department of Mathematics, Hansraj College, University of Delhi on February 9, 2021.
- Talk on “**Educational and Political Challenges before Young India: Dr. Ambedkar’s Insight**” under the aegis of Ambedkar Study Circle in Hansraj College, University of Delhi on February 18, 2019.
- FDP on “**Software Packages for Mathematical Sciences**” in the Department of Mathematics, Hansraj College, University of Delhi on November 14-19, 2018.
- FDP On “**Mathematica: A Tool for Computational Analysis**” in the Department of Mathematics, Hansraj College, University of Delhi on March 10-11, 2018

Workshops, Conferences, FDPs (Participated)

- Online training programme on **NEP 2020 Orientation & Sensitization Programme**, April 20-29, 2024, MM-TTP, UGC, Ministry of Education, Government of India, Delhi.
- International Conference on **Recent Trends in Mathematics**, December 22-24, 2021, MH-FDC, HRC, Delhi.
- 4th International Conference on **Recent Developments in Theory, Computation & Application of Differential Equation**, January 21-23, 2019, South Asian University, New Delhi, Delhi.
- Workshop on **Latex**, April 9, 2016, Department of Mathematics, HRC, University of Delhi, Delhi.
- National Conference on **Advances in Mathematics**, 7-8 March 2014, HRC, University of Delhi, Delhi.
- Workshop on **Foundation Course Building Mathematical Ability**, 24-26 June 2013, University of Delhi, Delhi.
- National workshop on **Optimization Techniques & Their Applications**, 5-11 June 2013, MNNIT Allahabad.

Research/Internship Guidance

- As **Summer Internship Supervisor** for several students from different universities.
<https://www.brijmohan.in/research-internships>
- As **Principal Investigator** in the Innovation Project: "Study and Security Analysis of Smart Cards", 2015-2016, University of Delhi, Delhi.

Administrative Assignments

- **Research Coordinator**, RDC, Hansraj College, 2023-2024
- **Member**, Collaboration & Community, Committee of RDC, Hansraj College, 2022-2023.
- **Member**, ICT Committee, Hansraj College, 2021-2022.
- **Member**, Portal Committee, Hansraj College, 2015-2016.
- **Convenor**, Vision Society (Hans Vision, Hansraj College), 2014-2015.
- **Convenor**, Pixels Society, Hansraj College, 2014-2015.
- **Stall Guide**, Antardhvani-Hansraj College, 2015.

Extra-Curricular Activities

- Achieved the first prize for Mathematical Poetry “**Duvidhaa**” on National Mathematics Day by the Department of Mathematics, University of Delhi, 22 December 2022.

- Awarded an honor for realistic story writing “**Zidki Udaan**” by Hindi Academy, Government of Delhi, published in Indraprastha Bharti, New Delhi, December 2016.
- Enacted in a play-themed “**Surgery**” in “Chekhov ki Duniya” at Hansraj College on March 24, 2017.
<https://www.youtube.com/watch?v=nD3HO6ubHQM>
- Play musical instruments such as Keyboard, Guitar, Flute, Mouth Organ, and Cajon.
- Hindi Poetry Blog: www.brijpoems.blogspot.in.
- Chess (Captain for College Team in Graduation 2002-2004)
- Photography: www.brijmohan.in/photography
- Short Hindi Stories: **Zidki Udaan, Dibiya, Premgeet, Tadarthta** and others
- Social Work:
 1. [iPA_inspired Progressive Association | Meerut](#) (Founder)
 2. Ambedkar Mission Siksha Trust, Ghaziabad (Member)

References

1. Professor **Raj Kumar**, Department of Mathematics, Kirori Mal College, University of Delhi, India, rajkumar@kmc.du.ac.in, rajkmc@gmail.com.
2. Professor **Preeti Dharmarha**, Department of Mathematics, Hansraj College, University of Delhi, India, drpreetidharmarha@hrc.du.ac.in, pdharmarha@gmail.com.
3. Professor **Dharmendra Kumar**, Department of Mathematics, Sri Guru Tegh Bahadur Khalsa College, University of Delhi, India, dharmendrakumar@sgtbkhalsa.du.ac.in

I sincerely acknowledge that all details furnished in this CV are true to the best of my knowledge.

(BRIJ MOHAN)