GOVERNMENT GENERAL DEGREE COLLEGE, RANIBANDH

FACULTY PROFILE

DEPARTMENT OF MATHEMATICS

Dr Hiranmoy Garai

Designation	Assistant Professor (W.B.E.S.)
Address	Suryasen Colony, Durgapur, Dist.: Paschim Bardhaman, West Bengal- 713206
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Educational Qualification

Degree	Institution	Year
Ph.D.	NIT Durgapur	2021
P.G.	The University of Burdwan	2016
U.G.	The University of Burdwan	2014

Research Areas

- Fixed Point Theory
- Best Proximity Point Theory
- Operator Equations

Areas of Interest/ Specialization

- Functional Analysis
- Topology
- Real Analysis

Career Profile

- Served as Lecturer in Mathematics at Siliguri Government Polytechnic from 02nd March, 2021 to 11th February, 2025.
- Serving as an Assistant Professor in Mathematics at Government General Degree College, Ranibandh since 12th February, 2025.

Topics Taught in the Previous Academic Year

Linear Algebra, Differential Equation

Publications

[1] **H. Garai**, L.K. Dey, and A. Chanda. Positive solution to fractional thermostat model in Banach spaces via fixed point results. *J. Fixed Point Theory Appl.*, 20(3):2018.
DOI: http://doi.org/10.1007/s11784-018-0584-8

[2] **H. Garai**, L.K. Dey, and T. Senapati. On Kannan type contractive mappings. *Numer. Funct. Anal. Optim.*, 39(13):1466-1476, 2018.
DOI: http://doi.org/10.1080/01630563.2018.1485157

[3] **H. Garai**, L.K. Dey. Common solution to a pair of non-linear matrix equations via fixed point results. *J. Fixed Point Theory Appl.*, 21(2):2019.
DOI: http://doi.org/10.1007/s11784-019-0698-7

[4] S. Som, A. Petrusel, **H. Garai**, and L.K. Dey. Some characterizations of Reich and Chatterjea type nonexpansive mappings. *J. Fixed Point Theory Appl.*, 21(4):2019.
DOI: https://doi.org/10.1007/s11784-019-0731-x

[5] A. Bera, **H. Garai**, B. Damjanovic, and A. Chanda. Some Interesting Results on F-metric Spaces. *Filomat*, 33(10):3257–3268, 2019.
DOI: https://doi.org/10.2298/FIL1910257B

[6] **H. Garai**, L.K. Dey, and Y.J. Cho. On contractive mappings and discontinuity at fixed points. *Appl. Anal. Discrete Math.*, 14(1):033–054, 2020.
DOI: https://doi.org/10.2298/AADM181018007G

[7] S. Karmakar, **H. Garai**, L.K. Dey, and A. Chanda. Solution to sec- ond order differential equations via F_w-contractions. *Fixed Point Theory*, 22(2):713-726, 2021.
DOI: 10.24193/fpt-ro.2021.2.46

[8] **H. Garai**, L.K. Dey, P. Mondal, and S. Radenovic. Some remarks on $b_v(s)$-metric spaces and fixed point results with an application. *Nonlinear Anal. Model. Control*,

25(6):1015–1034, 2020.
DOI: https://doi.org/10.15388/namc.2020.25.20559

[9] A. Bera, L.K. Dey, **H. Garai**, and S. Raha. Common fixed points via asymptotic contraction and application to matrix equations. *Comput. Appl. Math.*, 39:2020. Article Number 301.
DOI: https://doi.org/10.1007/s40314-020-01358-6

[10] L.K. Dey, **H. Garai**, H.K. Nashine, and C.H. Nguyen. Multivalued generalized graphic θ-contraction on directed graphs and application to mixed volterra- fredholm integral inclusion equations. *Quaest. Math.*, 44(12):1691-1709, 2021.
DOI: https://doi.org/10.2989/16073606.2020.1821828

[11] H.K. Nashine, S. Shil, **H. Garai**, L.K. Dey, and V. Parvaneh. Common fixed-point results in ordered left (right) quasi-b-metric spaces and applications. *J. Math.*, 2020:2020. Article ID 8889453.
DOI: https://doi.org/10.1155/2020/8889453

[12] **H. Garai**, E. Karapınar, and L.K. Dey. Best Proximity Point Results for Contractive and Cyclic Contractive Type Mappings. *Numer. Funct. Anal. Optim.*, 42(7):849–864, 2021.
DOI: https://doi.org/10.1080/01630563.2021.1933518

[13] P. Mondal, **H. Garai**, and L.K. Dey. On contractive mappings in $b_v(s)$-metric spaces. *Fixed Point Theory*, 23(2):573-590, 2022.
DOI: 10.24193/fpt-ro.2022.2.10

[14] P. Mondal, **H. Garai**, and L.K. Dey. On Some Enriched Contractions in Banach spaces and an application. *Filomat*, 35(15):5017–5029, 2021.
DOI: https://doi.org/10.2298/FIL2115017M

[15] P. Mondal, **H. Garai**, and L.K. Dey. On Proximal contractions via implicit relations and Best proximity points. *Miskolc Math. Notes*, 22(2): 783- 798, 2021.
DOI: https://doi.org/10.18514/MMN.2021.3423

[16] S. Karmakar, **H. Garai**, L.K. Dey, and A. Chanda. Existence of Solutions to Non-Linear Quadratic Integral Equations via Measure of Non-Compactness. *Filomat*, 36(1):73-87, 2022.
DOI: https://doi.org/10.2298/FIL2201073K

[17] S. Karmakar, **H. Garai**, A. Chanda, and L.K. Dey. New fixed point results for asymptotic contractions and its application to cantilever beam problems. *Math. Vesnik*, 74(4):260-271, 2022.
DOI: 10.57016/MV-anbl7148

[18] **H. Garai**, H.K. Nashine, L.K. Dey, and R.W. Ibrahim. Fixed point results via modified w-distance and an application to networks communication. *Filomat*, 36(12):4123–4137, 2022.
DOI: https://doi.org/10.2298/FIL2212123G

[19] A. Bera, L.K. Dey, S. Som, **H. Garai**, and W. Sintunavarat. Boyd-Wong contraction in F-metric structure and applications. *Appl. Gen. Topol.*, 23(1):157-167, 2022.
DOI: https://doi.org/10.4995/agt.2022.15356

[20] A. Chanda, **H. Garai**, L.K. Dey, V. Rakočević, and T. Senapati. (ψ,ϕ)- Wardowski contraction pairs and some Applications. *Comput. Appl. Math.*, 40:2021. Article Number 294.
DOI: https://doi.org/10.1007/s40314-021-01679-0

[21] **H. Garai**, H.K. Nashine, S. Shil, and L.K. Dey. On solutions of system(s) of operator equations involving finitely many equality constraints. *Indian J. Math.*, 64(4):323-341, 2022.

[22] P. Mondal, **H. Garai**, A. Petrusel, and L.K. Dey. On best proximity points of cyclic contractions via implicit relations. *J. Anal.* 31(3): 1771-1782, 2023.
DOI: https://doi.org/10.1007/s41478-022-00533-8

[23] A. Bera, P. Mondal, **H. Garai**, and L.K. Dey. On Maia type fixed point results via implicit relation. *Aims Math.*, 8(9):22067-22080, 2023.
DOI: 10.3934/math.20231124

[24] **H. Garai**, P. Mondal, and L.K. Dey. On ommon fixed point results via implicit relations. *Miskolc Math. Notes*, 24(3):1337–1350, 2023.
DOI: https://doi.org/10.18514/MMN.2023.4181

[25] **H. Garai**, L.K. Dey, W. Sintunavarat, S. Som, and S. Raha. On new existence of a unique common solution to a pair of non-linear matrix equations. *J. Math. Anal,*, 15(6):12-29, 2024.

DOI: https://doi.org/10.54379/jma-2024-6-2

[26] P. Mondal, **H. Garai**, and L.K. Dey. On some common fixed point results of Gonicki-type mappings. *Filomat*, 39(4):1331-1339, 2025.
DOI: https://doi.org/10.2298/FIL2504331M

Research Paper Presentation in Conferences

1. Paper Presented on **"A Study on Kannan Type Contractive Mappings"** in the International Conference on "Mathematical Analysis and Application in Modeling" organized by Department of Mathematics, Jadavpur University during 9-12th January, 2018.
2. Paper Presented on **"On Kannan Type Contractive Mappings in Non-Compact Metric Spaces"** in the International Conference on "Mathematics and its Applications" organized by Department of Mathematics, The University of Burdwan during 15-17th February, 2018.
3. Paper Presented on **"Contractive Mappings in Non-compact spaces"** in the International Conference on "Applied Mathematics in Science and Engineering" organized by ITER, Siksha 'O' Anusandhan and NIT Anurachal Pradesh during 24-26th October, 2019.

Other Conferences and Workshops Attended:

1. Participated in AICTE-QIP short term course on "Advanced Matrix Algebra and Applications" organized by Indian Institute of Technology Kharagpur during 17-23rd September, 2019
2. Participated in Special Lecture Session on "Stochastic Game Theory" organized by National Institute of Technology on 25th April, 2018.

Awards and Distinction

- Recipient of CSIR Fellowship for Pursuing Ph.D. (2017-2021).

Other Academic Achievements

- Qualified CSIR-NET(LS), CSIR-NET(JRF), GATE

Other Activities

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Vision

As an assistant professor in Mathematics, my vision is to inspire and empower students to develop a deep understanding and appreciation of mathematical concepts, fostering a love for learning and critical thinking that extends beyond the classroom. I aim to create an inclusive and supportive learning environment to inspire critical thinking, foster problem-solving skills and empower students to explore the beauty and relevance of mathematics in real-world applications.