Vaibhav Shekhar

Contact Information

Room No. 10
Department of Mathematics
Central University of Jharkhand, Ranchi
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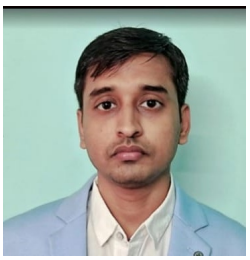

Personal Website

https://vbvskr.github.io/Vaibhav-Shekhar/

Research Details

1. Research Gate: Profile
2. Scopus ID: 35363011900
3. Google Scholar: Profile
4. ORCID: 0000-0002-7540-2528

Research Interest

1. **Linear Algebra**
   - Specific areas of interest:
     1. Matrix Theory, Iterative Methods and Generalized Inverses
     2. Numerical Range of Matrices

Teaching Interests

Linear Algebra, Numerical Analysis, Real Analysis, Complex Analysis and Abstract Algebra.

Research Experience

Post-Doctral Fellow (2022, 14 Dec – 2023, 13 Dec)
Department of Mathematics
Indian Institute of Technology (IIT) Delhi, India
Mentor: Dr. Punit Sharma

Teaching Assistant: MTL104 (Linear Algebra and Applications) and MTL100 (Calculus)

Teaching Experiences

Assistant Professor (2026, 06 February – Present)
Department of Mathematics
Central University of Jharkhand, Ranchi, India

Courses Taught:
UG Level: Programming with Python, Introductory Mathematics-II, Complex Analysis (Int. UG-PG Programme)

Assistant Professor (2024, 24 October – 2026, 05 February)
Department of Mathematics
Sri Narayan Singh College, Motihari, Bihar, India
(A constituent college of B.R.A. Bihar University, Muzaffarpur)

Courses Taught:
UG Level: Algebra, Calculus & Geometry (4-year UG Programme)

Assistant Professor (2024, 04 January – 2024, 23 October)
Department of Mathematics
Govt. Engineering College Sheikhpura, Bihar, India

Courses Taught:
UG Level: Calculus and Linear Algebra; Differential Equations (B. Tech.)

Temporary Faculty (2022, 3 Aug – 2022, 9 Dec)
Department of Mathematics
National Institute of Technology (NIT) Raipur, Chhattisgarh, India

Courses Taught:
UG Level: Calculus and Complex Analysis (B. Tech.)
PG Level: Computer Oriented Numerical Analysis (MCA)

Guest Faculty (2022, 19 Feb – 2022, 25 July)
Department of Mathematics
Marwari College, Ranchi, Jharkhand

Courses Taught:
UG level: Calculus, Linear Algebra, ODE
PG level: Differential Geometry, Numerical Solution of PDE, Numerical Analysis, MATLAB

Education

Ph.D. (August 2018 – February 2022)
Department of Mathematics
National Institute of Technology Raipur
♢ **Thesis submitted on 03 Feb, 2022 and defended on June 22, 2022.**

Title of the Thesis:	On Convergence Theory of Iterative Methods Based on Matrix Splittings and Generalized Inverses.
Thesis Advisor:	Dr. Debasisha Mishra

♢ Qualified **CSIR NET** (Rank-89): Dec 2017
M.Sc. (Mathematics) (2015-2017)
Department of Mathematics
Central University of South Bihar, Gaya.

B.Sc. (Mathematics as Honours) (2012-2015)
St. Xavier's College, Ranchi
Affiliated to Ranchi University
♢ First Class Honours with Distinction

I.Sc. (2009-2011)
L.M.N.S.M Inter College Itki, Ranchi
Jharkhand Academic Council (JAC)

10th (2008-2009)
Kendriya Vidyalaya, C.C.L, Ranchi
Central Board of Secondary Education (CBSE)

Awards and Fellowships

1. Vice Chancellor's award for research excellence (2025)
2. Institute Post-Doctoral Fellowship (I-PDF) by IIT Delhi (2022)
3. Best paper award in a national conference (2019)
4. JRF (2018) and SRF (2020) fellowship awarded by NIT Raipur
5. Rank-1 holder in CUSB Entrance Exam for M.Sc.

Research Publications

In Refereed Journals:
(Note that the journal details is provided after each paper where the first one indicates publisher's name, the next one shows whether it is in Science Citation Index (SCI) list or in Science Citation Index Expanded (SCIE) list or in Emerging Sources Citation Index list (ESCI) or in Scopus list, the next one is 2020 AMS Mathematical Citation Quotient (MCQ:) and the last one is 2021 Impact Factor (IF:) of the corresponding journal.)

11. **Vaibhav Shekhar** and P. Sharma, "Additional results on convergence and semiconvergence of three-step alternating schemes for solving singular linear system". Filomat 39:15 (2025), 5121–5140.
(The Faculty of Sciences and Mathematics, University of Nis, **SCIE** (Q2), Scopus, MCQ: 0.31 & IF: 0.9)
https://www.pmf.ni.ac.rs/filomat-content/2025/39-15/39-15-11-21539.pdf

10. **Vaibhav Shekhar**, 'Further results on alternating two-stage iterative method", **Indian Journal of Pure and Applied Mathematics**, 2024.
(Springer, MathSciNet (Q3), Scopus, **SCIE**, MCQ:, IF: 0.4)
https://link.springer.com/article/10.1007/s13226-024-00669-2

9. A. Saeed, **Vaibhav Shekhar**, D. Mishra "Numerical range of weighted Moore-Penrose Inverse of tensors", **Electronic Journal of Linear Algebra**, 2024, 40:140-171.
Role: **Corresponding Author**
(International Linear Algebra Society, MathSciNet (Q2), Scopus, **SCIE**, MCQ: 0.55, IF: 0.882)

https://journals.uwyo.edu/index.php/ela/article/view/8143/6581

8. A. Kumar, **Vaibhav Shekhar**, D. Mishra "On generalized-Drazin inverses and GD-star matrices", **Journal of Applied Mathematics and Computing**, 2023, 69:4553–4585.
   Role: **Corresponding Author**
   (Springer, **MathSciNet** (Q2), **SCIE**, Scopus, MCQ: 0.57, IF: 2.2)
   https://link.springer.com/article/10.1007/s12190-023-01938-9

7. A. Kumar, **Vaibhav Shekhar**, D. Mishra "W-weighted GDMP inverse for rectangular matrices", **Electronic Journal of Linear Algebra**, 2022, 38:632-654.
   Role: **Corresponding Author**
   (International Linear Algebra Society, MathSciNet (Q2), **SCIE**, Scopus, MCQ: 0.55, IF: 0.882)
   https://journals.uwyo.edu/index.php/ela/article/view/7015/5915

6. **Vaibhav Shekhar**; C. K. Giri and D. Mishra, *A note on double weak splittings of type II*, **Linear and Multilinear Algebra**, 2022, 70(12):2297-2317.
   (Taylor and Francis, **SCIE** (Q1), Scopus, MCQ: 0.83, IF: 1.736)
   https://www.tandfonline.com/doi/full/10.1080/03081087.2020.1795057

5. **Vaibhav Shekhar**; S. Nayak; N. Mishra and D. Mishra, Convergence of two-stage iterative scheme for K-weak regular splittings of type II, **Applied Mathematics and Computation**, 2021, 410:126471.
   (Elsevier, **SCI** (Q1), Scopus, MCQ: 0.62, IF: 4.091)
   https://www.sciencedirect.com/science/article/abs/pii/S0096300321005609

   This work got recognition from WHO COVID-19 research database: https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/en/covidwho-1326904

4. A. Nandi; **Vaibhav Shekhar**; N. Mishra and D. Mishra, *Alternating stationary iterative methods based on double splittings*, **Computers & Mathematics with Applications**, 2021, 89:87–98.
   (Elsevier, **SCI** (Q1), Scopus, MCQ: 1.09, IF: 3.476)
   https://www.sciencedirect.com/science/article/abs/pii/S0898122121000638

3. **Vaibhav Shekhar**; N. Mishra and D. Mishra, *On convergence theory of double K-weak splittings of type II*, **Applications of Mathematics**, 2022, 67:341–369.
   (Springer, **SCIE** (Q3), Scopus, UGC-CARE List (India), MCQ: 0.25 , IF: 0.881)
   https://link.springer.com/article/10.21136/AM.2021.0270-20

2. **Vaibhav Shekhar**; C. K. Giri and D. Mishra, *Iterative methods based on proper splittings and proper multisplittings for rectangular linear system*, **Filomat**, 2020, 34(6):1835–1851.
(The Faculty of Sciences and Mathematics, University of Nis, **SCIE** (Q2), Scopus, MCQ: 0.31 & IF: 0.844)
http://www.doiserbia.nb.rs/Article.aspx?ID=0354-51802006835S#.YCd64GgzbIU

1. **Vaibhav Shekhar**; C. K. Giri and D. Mishra, *On Convergence of Two-Stage Iterative Scheme*, **The Journal of Analysis** 29, 1207–1226 (2021).
(Springer, **ESCI**, Scopus, UGC-Care List India, MCQ: 0.24, IF: 0.8)
https://link.springer.com/article/10.1007%2Fs41478-021-00306-9

Professional Affiliations and Services

1. Referee Duty (Journals):
   - Filomat (SCIE)
   - Mathematical Notes (SCIE)
   - AIMS Mathematics (SCIE)
   - Mathematical Modelling and Control (ESCI, Scopus)
   - Advances in Pure Mathematics (Web of Science)

2. Review Duty:
   - AMS Mathematical Review (Mathscinet)

Participated in Conferences

1. Presented a paper entitled " More on convergence of two-stage alternating iterative scheme" in the International Conference **"Linear Algebra and its Applications"** organized by **Manipal Academic of Higher Education, Karnataka** during **15-17 December, 2021**.
2. Presented a paper entitled *"Convergence for double K-weak splittings of matrices of type II"* in the **International Conference on Numerical Heat Transfer and Fluid Flow**, organized by Department of Mathematics, **National Institute Technology Warangal** during **17-19 January, 2020**.
3. Presented a paper entitled "Convergence of two-stage iterative scheme for K-weak regular splittings of type II with application to Covid-19 pandemic model" in the International Conference **"Applied Linear Algebra, Probability and Statistics"** organized by **Manipal Academic of Higher Education, Karnataka** during **17-18 December, 2020**.
4. Presented a paper entitled "Convergence of double weak splittings of type II" in the National Conference on "**Mathematical Modelling, Methods and Computation in Science and Engineering (MMMCSE-2019)**" held at **National Institute of Technology Raipur** during **19-20 October, 2019**.
5. Presented a paper entitled "More on convergence criteria of three-step alternating iteration" in the **National Conference on "Recent Trends in Applied and Computational Mathematics"** held at **National Institute of Technology Raipur** on during **20-21 July, 2019**.

Govt. Exams Qualified

1. **Bihar Public Service Commission** (BPSC) for the post of Assistant Professor (Mathematics) in 2023.
2. **Bihar State University Service Commission** (BSUSC) for the post of Assistant Professor (Mathematics) in 2024.