

CURRICULUM-VITAE

PERSONAL INFORMATION

Dr. Nikunja Bihari Barik

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Date of Birth: 2th July 1986

Gender: Male

Marital Status: Married

Nationality: Indian

Languages: English, Hindi, Odia.

EDUCATION

2018 Ph.D., Indian Institute of Technology, Bhubaneswar.
Thesis Supervisor: Dr. T. V. S. Sekhar, Professor, IIT BBS

Thesis Title: Multilevel Local Radial Basis Function Method for Steady Navier-Stokes Equations.

- 2012 M.Phil (Mathematics), Ravenshaw University, Odisha.
- 2009 M.Sc. (Mathematics), Utkal University, Odisha.
- 2007 B.Sc. (Mathematics Hons. with Physics and Chemistry), Utkal University, Odisha.
- 2004 I.Sc. (PCMG), CHSE, Odisha.
- 2002 Matriculation, BSE, Odisha.

PROFESSIONAL EXPERIENCE

- 1st September 2023 to till date: Assistant Professor, Govt. College Koraput, Odisha.
- 2021-31st August 2023: Assistant Professor Grade-2 at VIT-AP University, Andhra Pradesh.
- 2nd May 2018- 2021: Assistant Professor Grade-1 at VIT-AP University, Andhra Pradesh.
- 2015-2015: One semester (Teaching assistant) at IIT Bhubaneswar, India.
- 2014-2014: One semester (Advance Numerical lab) at IIT Bhubaneswar, India.
- 2011-2013: Lecturer at Nalanda Institute of Technology, Bhubaneswar, India.
- 2009-2011: Lecturer at Mahavir Institute of Engineering and Technology, Bhubaneswar, India.

ADMINISTRATIVE EXPERIENCE

- 2nd August 2024 to till date- Head of the Department of Computer Science (I/C).
- 2nd August 2024 to till date- Officer in Charge of All India Survey of Higher Education (AISHE).

- 2nd August 2024 to till date- Officer in Charge of University Grants Commission (UGC).
- May 2022- August 2023: Head of the Department (HOD) Mathematics at VIT-AP University.
- June 2018- May 2022: Department Time Table Co-ordinator.
- November 2018- July 2022: Co-ordinator of Environmental club.
- Two semesters: Course coordinator.

PROFESSIONAL SKILLS

- Matlab, Fortran, R, Python.
- Latex, Origin, Tecplot.

LIST OF PUBLICATIONS

- 1) **N. B. Barik** and T. V. S. Sekhar, An efficient local RBF meshless scheme for steady convection-diffusion problems, *International Journal of Computational Methods*, 14(6), 1750064, 2017. (World Scientific, **SCI, IF -2.193, Scopus**)
- 2) **N. B. Barik** and T. V. S. Sekhar, A novel RBF-FD meshless scheme in curvilinear geometry for unbounded flows. *International Journal for Computational Methods in Engineering Science and Mechanics*, 18(4-5), 209-219, 2017. (Taylor & Francis, **Scopus**)
- 3) **N. B. Barik** and T. V. S. Sekhar, Accommodative FAS-FMG multilevel based meshfree augmented RBF-FD method for Navier-Stokes equations in spherical geometry, *Communications in Computer and Information Science*, 655, 141-151, 2017. (Springer, **Scopus**)
- 4) **N. B. Barik** and T. V. S. Sekhar, Mesh-free multilevel iterative algorithm for Navier--Stokes equations, *Numerical Heat Transfer, Part B: Fundamentals*, 79 (3), 150--164, 2020. (Taylor & Francis, **SCI, IF-1.586**,

Scopus)

- 5) K. L. Ojha, and **N. B. Barik**, and GC Dash, and M Das, Fully developed MHD mixed convective flow through a composite system in a vertical channel, *Numerical Heat Transfer, Part B: Fundamentals*, 80 (3-4), 53-70, 2021. (Taylor & Francis, **SCI, IF-1.586, Scopus**)
- 6) **N. B. Barik** and T. V. S. Sekhar, A modified multilevel meshfree algorithm for steady convection-diffusion problems, *International Journal for Numerical Methods in Fluids*, 93(7), 2121-2135, 2021. (Wiley, **SCI, IF-2.107, Scopus**)
- 7) **N. B. Barik** and T. V. S. Sekhar, Multilevel Meshfree RBF-FD Method for Elliptic Partial Differential Equations, *Engineering Mathematics and Computing*, 1042, 2022 (Springer, **Scopus**)
- 8) K. L. Ojha, **N. B. Barik**, and Pratikshya Dash, Effect of sinusoidal pressure gradient on MHD flow of viscoelastic fluid in a channel, *Numerical Heat Transfer, Part B: Fundamentals*, (published online), 2023. (Taylor & Francis, **SCI, IF-1.586, Scopus**)
- 9) **N. B. Barik**, K. L. Ojha, T. V. S. Sekhar and Debashis Mishra, Meshfree Full Approximation Scheme-Full multilevel algorithm for Convection dominated problems, 2024 (review submitted).
- 10) **N. B. Barik**, K. L. Ojha and T. V. S. Sekhar, An iterative multilevel v-cycle algorithm for meshfree method, 2024 (under review).

LIST OF PROJECTS

- Multilevel compact integrated radial basis function methods for Navier-Stokes equations in curvilinear geometry with unbounded flows, funded by VIT-AP University, Andhra Pradesh, Completed.
- A modified meshfree RBF-FD method for solving flow over an Air foil, funded by Odisha State Higher Education Council (OSHEC), Department of Higher Education, Government of Odisha, Ongoing.

LIST OF PATENT PUBLISHED

1. N. B. Barik and T. V. S. Sekhar, Mesh-free multilevel iterative algorithm for Navier--Stokes equations, IN Patent App. 202141060887 A.
2. N. B. Barik and T. V. S. Sekhar, A system and method for enabling a modified multilevel meshfree technique, IN Patent App. 202441002724 A.

LIST OF CONFERENCE/ WORKSHOP ORGANISED

1. Chair of Technical Program Committee of International conference on Advances in Transport phenomena- ICATP 2022 at VIT-AP University, Andhra Pradesh. (<https://icatp2022.com/OrgCom>)
2. Joint Organizing Secretary of 66th Congress of the Indian Society of Theoretical and Applied Mechanics- **ISTAM-2021**, at VIT-AP University, Andhra Pradesh. (<https://vitap.ac.in/istam-2021/>)
3. Organizing member of International conference AISP-2020, at VIT-AP University, Andhra Pradesh.
4. Organizing member of International symposium ISMNF-2018, at VIT-AP University, Andhra Pradesh.
5. Organizing member of National Webinar Series on Foundations of Data Science-2021, at VIT-AP University, Andhra Pradesh.
6. Organizing member of Hands –On 3 Day FDP on Statistical Data Analysis and Machine Learning Using R-2018, at VIT-AP University, Andhra Pradesh.
7. Organizing member of Hands On 2-Day Workshop on Statistical Data Analysis Using R-2018-2018, at VIT-AP University, Andhra Pradesh.

LIST OF CONFERENCE PAPER PRESENTED

- N. B. Barik and T. V. S. Sekhar, Augmented RBF-FD method for unbounded domains, IMA Conference on Numerical Methods for Simulation, Mathematical Institute, University of Oxford, UK, 1-4th September 2015 (Presented by Prof. T.V.S. Sekhar).
- N. B. Barik and T. V. S. Sekhar, An efficient upwind based RBF-FD method for steady convection-diffusion problems, International conference on current trends in PDEs: Theory & computations, South Asian University New Delhi, 28-30th December 2015.
- N. B. Barik and T. V. S. Sekhar, Multilevel RBF-FD method for Navier-Stokes equations. International conference on Advances in Scientific Computing 2016, IIT Madras, Chennai, 28-30th November 2016.
- N. B. Barik and T. V. S. Sekhar, Accommodative FAS-FMG multilevel based meshfree augmented RBF-FD method for Navier-Stokes equations in spherical geometry. International conference on Mathematics and Computing 2017, HIT, India, 17-21st January 2017.
- N. B. Barik and T. V. S. Sekhar, Multilevel Meshfree RBF-FD Method for Elliptic Partial Differential Equations. International conference on Engineering Mathematics and Computing- ICEMC 2020, HIT, India, 05-07th February 2020.
- N. B. Barik, An efficient multilevel meshfree method for Scientific Computing. International conference on Recent Developments in Mathematics and Mathematical Science-ICRDMMS 2021, Calcutta Mathematical Society, Kolkata India, 09-11th December 2021.

INVITED LECTURER

- **Applications of Single Variable Differential Calculus** organised by SAS, VIT-AP University, Andhra Pradesh.

- **Numerical Methods using MATLAB** organised by SAS, VIT-AP University, Andhra Pradesh.

REVIEWER OF THE JOURNALS

- Neural Processing Letters (Springer).
- Journal of the Brazilian Society of Mechanical Sciences and Engineering (Springer).
- IJST Journal.

AWARDS AND FELLOWSHIPS

- Qualified in Graduate Aptitude Test in Engineering (**GATE**), (AIR-90) India, 2012.
- JRF at IIT Bhubaneswar, India, 2013-2015.
- SRF at IIT Bhubaneswar, India, 2015-2015.

LIST OF WORKSHOPS/ FDP ATTENDED

- Attended a workshop *Computational Techniques on Differential Equations with Matlab*, at IIT Rookee, India.
- Attended a GIAN program *Computational Acoustics for Emerging Needs*, at IIT Bhubaneswar, India.
- Attended a GIAN program *Modelling analysis and simulation of coagulant fluid*, at IIT Bhubaneswar, India.
- Attended a GIAN program *Current advances in numerical techniques for*

PDEs with random input data, at IIT Bhubaneswar, India.

- Attended a FDP program *Hands-on FDP on AI, Machine learning, Statistical Techniques to Bridge Industry-Academic Gap*, at VIT AP, India.
- Attended a workshop *Hands-on 2-Day workshop on Statistical data analysis using R*, at VIT AP, India, 8th to 9th December 2018.
- Attended an International symposium program *International symposium on Mathematical Modelling of Nanofluid flows*, at VIT AP, India, 17th December 2018.
- Participated *NEP 2020 Orientation & sensitization programme* at Malaviya Misson Teacher Training Centre (MMTTC) Berhampur University, Odisha from 18th January to 25th January 2024.



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