# Curriculum Vitae

## Gnaneshwar Nelakanti

- **Personal Information**


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| Name | Dr. Gnaneshwar Nelakanti |
| Marital status | Married |
| Current Address | Associate Professor,<br>Department of Mathematics, IIT, Kharagpur,<br>Kharagpur, West Bengal, pin-721302, India.<br>Email: gnanesh@maths.iitkgp.ernet.in<br>gnanesh8@gmail.com<br>Phone: 03222-283656(office) |


- **Educational Qualification**

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|---|---|
| **Ph. D.** (Mathematics) | Indian Institute of Technology, Bombay. |
| (July 1999-May 2003) | Thesis title: Spectral Approximation of Integral Operators. |
| **M. Sc.** (Mathematics) | Osmania University |
| (July 1995-May 1997) | Hyderabad, Andhra Pradesh, |
| India. | |
| | First division with distinction (79.5 percentage)). |
| **B. Sc.** (Mathematics) | Osmania University |
| (July 1992-May 1995) | Hyderabad, Andhra Pradesh, India. |
| | First division |

- **Teaching Activity:**

1. Theory of operators,
2. Mathematics-I(B-tech, Calculus),
3. Mathematics-II(B-tech, Calculus),
4. Real Analysis,

5. Topology,
6. Computational Functional Analysis,
7. Functional Analysis,
8. Linear Algebra.

**Departmental activities:–**

1. ERP department representative,
2. Member in Departmental Annual report

- **Field of specialization:**

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| Specialization | : | Numerical Functional Analysis, Approximation Theory. |
| Research Interest | : | Spectral Approximation of Integral and Differential Operators, Inverse and ill-posed problems, Approximate Solution of Operator equations. |
| Computer Skills | : | Matlab, C and C++. |

- **Research experience:**

1. August, 1999- May, 2003, Teaching Assistantship at Indian Institute of Technology Bombay, India.
2. May 2003- Nov 2003, Research associate at IIT, Bombay, India.
3. Dec 2003 - March 2005, NBHM post-doctoral research fellow at IISc, Bangalore, India.
4. March 2005 - Dec 2006, Post-doctoral research fellow at Zhongshan University, P. R. China.
5. From Dec 2006- June 2013 Assistant professor at Dept. of. mathematics, IIT, Kharagpur,
6. From June 2013- Till date Associate professor at Dept. of. mathematics, IIT, Kharagpur,

**Ph.D Guidance:–**

1. Bijaya Laxmi Panigrahi, Spectral approximation of Linear operators, 2011, (Co-supervisor, Awarded September, 2011)
2. Mitali Madhumita Sahani, Spectral Methods for Linear operators, 2011, (Awarded 26th, December, 2011)
3. Randhir Singh Guleria- Approximations to the Solutions of Differential and IntegroDifferential Equations, 2014(Co-supervisor, Awarded 2014)
4. Payel Das-Approximation Methods for Nonlinear Integral Equations, 2016 (Awarded 19th, July, 2016)
5. Moumita Mondal- presently working
6. Nilofar Nahid- presently working
7. Kapil Kant- presently working

**M-tech Guidance:–**

1. Prashant Mula, Iteration algorithms for Fredholm integral equations, 2008

- **Research papers:**

1. Das, Payel Sahani, Mitali Madhumita Nelakanti, Gnaneshwar, Convergence analysis of Legendre spectral projection methods for Hammerstein integral equations of mixed type, Journal of Applied Mathematics and Computing, 49, 529-555 (2015)
2. Das, Payel Nelakanti, Gnaneshwar, Convergence analysis of discrete legendre spectral projection methods for hammerstein integral equations of mixed type, Applied Mathematics and Computation, 265, 574-601 (2015)
3. Das, Payel Nelakanti, Gnaneshwar, Long, Guangqing, Discrete Legendre spectral projection methods for Fredholm-Hammerstein integral equations, Journal of Computational and Applied Mathematics, 278, 293-305 (2015)
4. Randhir Singh, Gnaneshwar Nelakanti, Jitendra Kumar, Approximate solution of two-point boundary value problems using Adomian decomposition method with Greens function. by Proc. Nat. Acad. Sci. India Sect. A, 85, 51-61 (2015)

5. Panigrahi, Bijaya Laxmi Nelakanti, Richardson extrapolation of iterated discrete collocation method for eigenvalue problem of a two dimensional compact integral operator, J. Appl. Math. Inform., 32, 567-584. (2014)

6. Long, Guangqing Wu, Weifen Nelakanti, Gnaneshwar, Iterated fast multiscale Galerkin methods for eigen-problems of compact integral operators, Appl. Math. Comput., 246, 638-647 (2014)

7. Randhir Nelakanti, Gnaneshwar Kumar, Jitendra, A new efficient technique for solving two-point boundary value problems for integro-differential equations, Singh, J. Math. Chem., 52, 2030-2051 (2014)

8. Singh, Randhir Kumar, Jitendra Nelakanti, Gnaneshwar, Approximate series solution of fourth-order boundary value problems using decomposition method with Greens function, J. Math. Chem., 52, 1099-1118. (2014)

9. Das, Payel Sahani, Mitali Madhumita Nelakanti, Gnaneshwar, Legendre spectral projection methods for Urysohn integral equations, J. Comput. Appl. Math, 263, 88102. (2014)

10. Randhir Singh, Gnaneshwar Nelakanti, Jitendra Kumar, Approximate solution of Urysohn integral equations using the Adomian decomposition method,( Article ID 150483), The Scientific World Journal, 2014 (2014), pp: 1-6 (2014)

11. Bijaya Laxmi Panigrahi, Gnaneshwar Nelakanti, Legendre Galerkin method for weakly singular Fredholm integral equations and the corresponding eigenvalue problem, Journal of Applied Mathematics and Computing, Volume 43, pp: 175-197 (2013)

12. Zhongying Chen, Guangqing Long, Gnaneshwar Nelakanti, Yongdong Zhang, Iterated Fast Collocation Methods for Integral Equations of the Second Kind, Journal of Scientific Computing, 57, pp 502-517 (2013)

13. Randhir Singh, Jitendra Kumar, Gnaneshwar Nelakanti, Approximate series solution of singular boundary value problems with derivative dependence using Greens function technique( 10.1007/s40314-013-0074-y), Computational and Applied Mathematics, (2013)

14. Randhir Singh, Jitendra Kumar, Gnaneshwar Nelakanti, Numerical solution of singular boundary value problems using Greens function and improved decomposition method, Journal of Applied Mathematics and Computing, 43, pp 409-425 (2013)

15. Panigrahi, Bijaya Laxmi; Nelakanti, Gnaneshwar Richardson extrapolation of iterated discrete Galerkin method for eigenvalue problem of a two dimensional compact integral operator, J. Sci Computing, 51(2012), 421-448.

16. Long, Guangqing; Nelakanti, Gnaneshwar Iterated fast multiscale Galerkin methods for Fredholm integral equations of second kind with weakly singular kernels. Applied Numerical Mathematics. 62 (2012) no. 3, 201-211.

17. Panigrahi, Bijaya Laxmi; Nelakanti, Gnaneshwar Wavelet Galerkin method for eigenvalue problem of a compact integral operator. Appl. Math. Comput. 218 (2011), no. 4, 1222-1232.

18. Panigrahi, Bijaya Laxmi; Nelakanti, Gnaneshwar Superconvergence of Legendre projection methods for the eigenvalue problem of a compact integral operator. J. Comput. Appl. Math. 235 (2011), no. 8, 2380-2391.

19. Long, Guangqing; Nelakanti, Gnaneshwar The multi-projection method for weakly singular Fredholm integral equations of the second kind. Int. J. Comput. Math. 87 (2010), no. 14, 3254-3265.

20. Long, Guangqing; Nelakanti, Gnaneshwar; Panigrahi, Bijaya Laxmi; Sahani, Mitali Madhumita Discrete multi-projection methods for eigen-problems of compact integral operators. Appl. Math. Comput. 217 (2010), no. 8, 3974-3984

21. Chen, Zhongying; Cheng, Sirui; Nelakanti, Gnaneshwar; Yang, Hongqi A fast multiscale Galerkin method for the first kind ill-posed integral equations via Tikhonov regularization. Int. J. Comput. Math. 87 (2010), no. 1-3, 565-582.

22. Long, Guangqing; Sahani, Mitali Madhumita; Nelakanti, Gnaneshwar Polynomially based multi-projection methods for Fredholm integral equations of the second kind. Appl. Math. Comput. 215 (2009), no. 1, 147-155.

23. Chen, Zhongying; Nelakanti, Gnaneshwar; Xu, Yuesheng; Zhang, Yongdong A fast collocation method for eigen-problems of weakly singular integral operators. J. Sci. Comput. 41 (2009), no. 2, 256-272.

24. Long, Guangqing; Nelakanti, Gnaneshwar Superconvergence of functional approximation methods for integral equations. Appl. Math. Lett. 22 (2009), no. 3, 401-405.

25. Chen, Zhongying; Long, Guangqing; Nelakanti, Gnaneshwar Richardson extrapolation of iterated discrete projection methods for eigenvalue approxima-

tion. J. Comput. Appl. Math. 223 (2009), no. 1, 48-61

26. Chen, Zhongying; Long, Guangqing; Nelakanti, Gnaneshwar The discrete multi-projection method for Fredholm integral equations of the second kind. J. Integral Equations Appl. 19 (2007), no. 2, 143-162.
27. Gnaneshwar, N. A degenerate kernel method for eigenvalue problems of compact integral operators. Adv. Comput. Math. 27 (2007), no. 3, 339-354.
28. Long, Guangqing; Nelakanti, Gnaneshwar Iteration methods for Fredholm integral equations of the second kind. Comput. Math. Appl. 53 (2007), no. 6, 886-894
29. Kulkarni, Rekha P.; Gnaneshwar, N. Spectral refinement using a new projection method. ANZIAM J. 46 (2004), no. 2, 203-224.
30. Kulkarni, Rekha P.; Gnaneshwar, N. Iterated discrete polynomially based Galerkin methods. Appl. Math. Comput. 146 (2003), no. 1, 153-165.
31. Kulkarni, Rekha P.; Gnaneshwar, N. Spectral approximation using iterated discrete Galerkin method. Numer. Funct. Anal. Optim. 23 (2002), no. 1-2, 91-104.