Dr. Gautam Singh

Dr. Gautam Singh is an Assistant Professor of Mathematics in NIT Trichy since October 2022. His areas of research interest include Numerical Analysis, Finite Element Methods and Discontinuous Galerkin Methods.

Previously he was an Assistant Professor in BIT Mesra from August 2021 to October 2022. He received his doctoral degree from IIT Guwahati in the year 2020 and the title of his thesis is "Superconvergence Analysis of the Discontinuous Galerkin Method for Singularly Perturbed Differential Equations". He has completed his Masters from IIT Guwahati in 2015 and Bachelors in Mathematics from Banaras Hindu University in2013. He has cleared both GATE (rank-145) and NET (rank-47) in the year 2015. Other achievements of him include receiving Inspire Fellowship in 2015-2020 and Best Oral Presentation Award in 2018.



- 1. Name: Dr. Gautam Singh
- 2. Designation: Assistant Professor
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6. Field(s) of Specialization: Numerical Analysis, Finite Element Methods, Discontinuous Galerkin Methods.

7. Employment Profile

Job Title	Employer	From	То
Assistant Professor	NIT Trichy	10/2022	Present
Assistant Professor	BIT Mesra Ranchi	08/2021	10/2022
Postdoc Fellow	IIT Roorkee	02/2021	08/2021

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	IIT Guwahati	2015- 2020	First	Superconvergence Analysis of the

				Discontinuous Galerkin Method for Singularly Perturbed Differential Equations
M.Sc.	IIT Guwahati	2013- 2015	First	Mathematics and Computing
B.Sc.	Banaras Hindu University, Varanasi	2010- 2013	First	Mathematics (Hons)
12th	UP Board	2007- 2009	First	Science
10th	UP Board	2005- 2007	First	Science

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	То

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	То

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization				
2010-2015	Inspire Scholarship	Department of Science and				
		Technology				
2018	Best Oral Presentation Award	Research Conclave'18, IIT				
		Guwahati.				

12. Fellowships

Year of Award	Name of the Fellowship	Awarding	From	То
		Organization	(Month/Year)	(Month/Year)
2015	Graduate Aptitude Test in Engineering in	MHRD	07/2015	07/2020

	Mathematics (GATE)			
2015	UGC-CSIR NET in Mathematics	CSIR	12/2015	

- 13. Details of Academic Work
 - (i) Curriculum Development
 - (ii) Courses taught at Postgraduate and Undergraduate levels
 - (a)- Partial Differential Equations
 - (b)- Numerical and Statistical Methods
 - (c)- Computational Mathematics
 - (d)- Discrete Mathematics
 - (e)- Mathematics II
 - (iii)Projects guided at Postgraduate level
 - (iv)Other contribution(s)
- 14. Details of Major R&D Projects

Title of Ducient	Eunding Agangy	Duration		Status
Title of Project	Funding Agency	From	То	Ongoing/ Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co- Supervisor)	Year of Award
Scholar	THESIS	Supervisor)	Tiwara

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date	Title	of	Level	of	Role	(Participant/	Speaker/	Chairperson,	Paper
(s)	Activity		Event		presen	iter, Any other)			
			(Internation	onal/					
			National/						
			Local)						

2013	Summer Internship	National	Worked on a project entitled linear partial differential equation during May-July 2013 as a summer research fellow under the supervision of <i>Dr. Venky Krishnan, TIFR Centre for Applicable Mathematics, Bangalore.</i>
2015	Workshop	National	Participated in the workshop on computational techniques for differential equations with MATLAB at the department of mathematics, <i>IIT Roorkee</i> , <i>Uttarakhand</i> , <i>India during July 02-06</i> , <i>2015</i> .
2016	Workshop	National	Attended workshop on singularly perturbed partial differential equations (SPPDEs): theory, computation and application (AWSPPDES 2016) at the Department of Mathematics and Statistics , IIT Kanpur, Uttar Pradesh , India during March 24-28, 2016.
2018	Conference	International	A uniform convergent NIPG method for a singularly perturbed system of reaction-diffusion BVPs. 4th International Conference on Mathematics and Computing (ICMC-2018) at IIT BHU, Varanasi.
2018	Conference	International	NIPG method for two parameter singular perturbation problems. 2nd International Conference on Advance in Computational Mathematics (ICACM-2018) at Tribhuvan University, Kathmandu, Nepal.
2019	Conference	National	Superconvergence properties of discontinuous Galerkin method with interior penalties for singularly perturbed problems. 34th Annual National Conference of BHU (NCMS-2019) at BHU Varanasi.
2019	Conference	International	Superconvergence of discontinuous Galerkin method for non-stationary convection-diffusion-reaction problems. Indo-German Conference on Computational Mathematics (IGCM 2019) at IISC, Bangalore.

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event	Date (s)	Role	Venue
	(International/			
	National/ Local)			

18. Invited Talks delivered

Topic	Date	Inviting Organization	

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date

20. Academic Foreign Visits

Country	Duration of Visit	Programme

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper
G. Singh and S. Natesan	Superconvergence of discontinuous Galerkin method with interior penalties for singularly perturbed two-point boundary-value problems. <i>Calcolo,</i> 55(4):54,2018.
G. Singh and S. Natesan	Study of the NIPG method for two-parameter singular perturbation problems on several layer adapted grids. <i>J. Appl. Math. Comput., 63(12):683-705, 2020.</i>
G. Singh and S. Natesan	A uniformly convergent numerical scheme for a coupled system of singularly perturbed reaction-diffusion equations. <i>Numer. Fun. Anal. Opt., 41(10):1172-</i>

	1189, 2020.
M. K. Singh and G. Singh & S. Natesan.	A unified study on superconvergence analysis of Galerkin FEM for singularly perturbed system of multi-scale nature. <i>J. Appl. Math. Comput., 66:221-243, 2021.</i>
A. Sendur, S. Natesan and G. Singh.	Error estimates for a fully discrete ε-uniform finite element method on quasi uniform meshes. <i>Hacettepe J. Math, Stat., 50(5):1306-1324, 2021.</i>
G. Singh and S. Natesan	Superconvergence properties of discontinuous Galerkin time stepping for singularly perturbed parabolic problems. <i>Numer. Algorithms., 2021.</i> https://doi.org/10.1007/s11075-021-01222-6

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of the Proceedings	
G. Singh and S. Natesan	A uniformly convergent NIPG method for a singularly perturbed system of reaction-diffusion boundary-value problems. Springer	IIT BHU
	Proc. Math. Stat., 253:429-440, 2018.	Varanasi

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number