Faculty Profile
of
Dr. Naveen Kumar

M.J.P. Rohilkhand University Campus Bareilly

Title	Dr.	**First Name**	Naveen	**Last Name**	Kumar	**Photograph**
Designation		Professor				
Department		Applied Mathematics				
Address	**Campus**	Department of Applied Mathematics, Basic Science Building, MJPRU Bareilly				
	Residence	--				
Mobile No.		9997876560				
Email ID		Personal	navindma@gmail.com			
		University Domain	navinfma@mjpru.ac.in			
Professional Networking ID, i.e. Linkedin, Twitter etc.		www.linkedin.com/in/naveen-kumar-4a34434b				

Educational Qualifications (Graduation Onwards)

Course/Degree	Institution	Year	Details/Thesis Topic/Subjects
B.Sc.	C.C.S. University Meerut	1999	PCM
M.Sc.	C.C.S. University Meerut	2001	Mathematics
Ph.D.	Indian Institute of Technology Roorkee	2009	Thesis Topic: "Mathematical Modeling, Control and Reliability Analysis of Robot Manipulators."

Career Profile

Organization / Institution	Designation	Duration	Nature of Duties
Research Centre for Automotive Parts Technology, Ajou University, Suwon, South Korea	Full-time Researcher (Postdoctoral Researcher)	2009-2012	Research
Research Institute, Research Centre for Air Craft Part Technology, Gyeongsang National University, Jinju, South Korea	Academic Research Professor	2012-2013	Academic and Research
National Institute of Technology, Kurukshetra	Assistant Professor	2013-2023	Academic and Research
Mahatma Jyotiba Phule Rohilkhand University, Bareilly	Professor	2023—till date	Academic and Research

Research Interests / Specialization

Mathematical Modeling of Dynamical Systems, Stability Analysis and Control of Robotic Systems, Numerical Methods for Differential Equations

Research Experience in Years: 15 Years

No of Research Scholars Successfully Guided

Name of Programme	Awarded	Under Supervision
Ph.D.	03	04
M.Phil.	--	--
Dissertation (M.Tech)	02	--

Researcher/ Expert ID	**Scopus**	**Orcid**	**Publons**	**Vidwan**	**Google Scholar**
	57188637143	0000-0001-9482-1579	--	--	**https://scholar.google.co.in/citations?user=Otetm-UAAAAJ&hl=en**

Teaching Experience (Subjects/Courses Taught): 11 Years

1. Mathematics-I
2. Mathematics-II
3. Mathematics-III/IV
4. Differential Calculus and Differential Equations
5. Integral Calculus and Difference Equations
6. Applied Numerical and Statistics Methods
7. Complex Analysis and Partial Differential Equations
8. Advanced Numerical Analysis

Honours / Awards & Fellowship FOR OUTSTANDING WORK

Name of Award/ Fellowship	**Awarded By**		
	Name of Governmental Agency	**Name of Government Supported Organization / Department**	**Name of International Recognized Body**
GATE Fellowship	MHRD, Government of India	IIT Roorkee	--
CSIR-UGC NET JRF Fellowship	UGC, Government of India	IIT Roorkee	--
Brain Korea 21 Postdoctoral Fellowship	--	--	BK 21 Program, Division of Mechanical Engineering, Ajou University Suwon, South Korea

Publications /Academic Activities (Numbers Only)									
Books & Monographs (Single Author)	-	Research Papers Published in International Journals	35	Papers Presented in Seminars/ Conferences	11	Seminar/ Conference Organized	01	Research Projects (Completed)	-
Books (Co-authored)	-	Research Papers Published in Other Journals	-	Seminar/ Conferences Attended	11	Workshops Organized	08	Research Projects (Ongoing)	-
Books (Edited)	-	Articles Published in Popular Fora, e.g., Websites, Blogs, Newspapers, Magazines etc.	-	Sessions Chaired in Seminars/ Conferences	02	Membership of Academic/ Professional Bodies	03	Foreign Countries Visited for Academic Assignments	1
Chapters in Edited Books	6			Resource Lectures Delivered	03				

Details of Publications /Academic Activities (2010 Onwards)

(a) Authored Books/ Monographs: Nil

Name of Book	Year of Publication	Publisher	ISBN No

(b) Edited Books: Nil

Year of Publication	Title	Publisher	ISBN	DOI No.	Citations

(c) Papers Published in Indexed/ Peer Reviewed Journals (SCI/SCIE/Scopus/Web of Science only)

Year of Publication	Title	Name of Journal	ISSN No	Citations	Impact Factor
2023	Fractional order fast terminal sliding mode control scheme for tracking control of robot manipulators	ISA Transactions, Elsevier	1879-2022	-	7.3
2023	A neural network based efficient leader–follower formation control approach for multiple autonomous underwater vehicles	Engineering Applications of Artificial Intelligence, Elsevier	1873-6769	01	8.0
2023	Force/position control of constrained mobile manipulators with fast terminal sliding mode control and neural network	Journal of Control, Automation and Electrical Systems, Springer	2195-3899	-	1.5
2023	Force/position control of constrained reconfigurable manipulators with sliding mode control based on adaptive neural network	International Journal of Modelling, Identification and Control, Inderscience	1746-6180	-	0.7
2023	A backstepping controller based on RBFNN for mobile manipulator with unknown wheel slippage	International Journal of Modelling, Identification and Control, Inderscience	1746-6180	-	0.7
2023	Design of Intelligent Optimal Controller for Hybrid	Journal of Ambient Intelligence and	1868-5145	01	-

	Position/Force control of Constrained Reconfigurable Manipulators	Humanized Computing, Springer			
2023	Control of coordinated multiple mobile manipulators with neural network-based fast terminal sliding mode control	International Journal of Dynamics and Control, Springer	2195-2698	-	-
2022	Intelligent Optimal Hybrid Motion/Force Control of Con-strained Robot Manipulator	International Journal of Automation and Control, Inderscience	1740-7516	-	1.2
2021	A new hybrid force/position control approach for time-varying constrained reconfigurable manipulators	ISA Transactions, Elsevier	1879-2022	08	7.3
2021	Neural network-based hybrid force/position control of con-strained reconfigurable manipulators	Neurocomputing , Elsevier	1872-8286	23	6.0
2021	An optimal control approach for hybrid motion/force control of coordinated multiple nonholonomic mobile manipulators using neural network	International Journal of Modelling, Identification and Control, Inderscience	1746-6180	04	0.7
2021	An intelligent optimal control approach for motion/force control of constrained non-holonomic mobile manipulators	International Journal of Mechatronics and Automation, Inderscience,	2045-1067	01	-
2020	An efficient hybrid approach for trajectory tracking control of autonomous underwater vehicles	Applied Ocean Research, Elsevier	1879-1549	34	4.3
2019	Motion/force control scheme for electrically driven cooperative multiple mobile manipulators	Control Engineering Practice, Elsevier	1873-6939	14	4.9
2019	Non-singular Terminal Sliding	Arabian Journal for Science and	2191-4281	05	2.9

	Mode Control of Robot Manipulators with H^{∞} Trajectory Tracking Performance	Engineering, Springer			
2019	A New Hybrid Position/Force Control Scheme for Coordi-nated Multiple Mobile Manipulators	Arabian Journal for Science and Engineering, Springer	2191-4281	16	2.9
2019	An Intelligent Tracking Control Scheme for Electrically- Driven Redundant Robots	Pertanika Journal of Science and Technology	2231-8526	01	0.6
2019	Force/motion control of constrained mobile manipulators including actuator dynamics	International Journal of Dynamics and Control, Springer	2195-2698	04	-
2019	Finite time control scheme for robot manipulators using fast terminal sliding mode control and RBFNN	International Journal of Dynamics and Control, Springer	2195-2698	21	-
2019	Intelligent controller for hybrid force and position control of robot manipulators using RBF neural network	International Journal of Dynamics and Control, Springer	2195-2698	23	-
2018	An Asymptotically Stable Control Scheme for Space Robot System", Arabian Journal for Science and Engineering	Arabian Journal for Science and Engineering, Springer	2191-4281	01	2.9
2018	Efficient position/force control of constrained mobile manipulators	International Journal of Dynamics and Control, Springer	2195-2698	19	-
2018	RBF Neural Control Design for SISO Nonaffine Nonlinear Systems	Procedia Computer Science, Elsevier	1877-0509	06	-
2018	Design of Intelligent Hybrid Force and Position Controlof Robot Manipulator	Procedia Computer Science, Elsevier	1877-0509	20	-
2018	Intelligent Tracking Control of Redundant Robot Manipulators	Procedia Computer Science,	1877-0509	02	-

	including Actuator Dynamics	Elsevier			
2018	Reliability analysis of a robotic system using hybridized technique	Journal of Industrial Engineering, International, Springer	1735-5702	46	-
2014	Enhancing Precision Performance of Trajectory Tracking Controller for Robot Manipulators with RBFNN and adaptive bound	Applied Mathematics and Computations, Elsevier	1873-5649	23	4.0
2013	Adaptive Neural Controller for Space Robot System, With an Attitude Controlled Base	Neural Computing & Applications, Springer	1433-3058	34	6.0
2012	Adaptive Neural Controller for Cooperative Multiple Robot Manipulator System Manipulating a Single Rigid Object	Applied Soft Computing, Elsevier	1568-4946	83	8.7
2012	Reliability Analysis of Waste Clean-Up Manipulator using Genetic Algorithms and Fuzzy Methodology	Computers & Operations Research, Elsevier	1873-765X	33	4.6
2012	Tracking Controlof Redundant Robot Manipulators using RBF Neural Network and an Adaptive Bound on Disturbances	International Journal of Precision Engineering and Manufacturing, Springer	2005-4602	27	1.9
2012	Adaptive Neural Controller for Visual Servoing of Robot Manipulators with Camera-in-Hand Configuration	Journal of Mechanical Science and Technology, Springer	1976-3824	14	1.6
2011	Neural Network Based Adaptive Hybrid Force/Position Control For Robot Manipulators	International Journal of Precision Engineering and Manufacturing, Springer	2005-4602	97	1.9
2011	Neural Network Based Nonlinear Tracking Control of	Mathematical and Computer Modelling,	0895-7177	81	-

	Kinematically Redundant Robot Manipulators	Elsevier			
2010	Reliability Analysis of Complex robotic System using Petri Nets and Fuzzy Lambda-Tau Methodology	Engineering Computations, Emerald	0264-4401	27	1.67

(d) Chapter/Paper Published in Edited Books

Publication **National/ International**	**Title of the Book**	**Title of the Chapter**	**Name & Address of Publisher**	**Year**	**ISBN**	**DOI**	**Citation Google/ web of science**
International	Convergence of Deep Learning and Artificial Intelligence in Internet of Things	Neural Network–Based Efficient Hybrid Control Scheme for the Tracking Control of Autonomous Underwater Vehicles	CRC Press, USA	2022	978-1-003-35596-0	https://doi.org/10.1201/9781003355960_2	-
International	Advances in Intelligent Systems and Computing book series (AISC, volume 1380)	Stability Analysis of HJB-Based Optimal Control for Hybrid Motion/Force Control of Robot Manipulators Using RBF Neural Network	Springer, Singapore	2022	978-981-16-1740-9	https://doi.org/10.1007/978-981-16-1740-9_44	03
International	Advances in Intelligent Systems and Computing book series (AISC, volume	Motion/Force Control for the Constrained Electrically Driven Mobile Manipulators	Springer, Singapore	2022	978-981-16-1740-9	https://doi.org/10.1007/978-981-16-1740-9_36	01

	1380)	Based on Hybrid Backstepping Control Approach					
International	Advances in Intelligent Systems and Computing book series (AISC, volume 1380)	RBF Neural Network-Based Terminal Sliding Mode Control for Robot Manipulators	Springer, Singapore	2022	978-981-16-1740-9	https://doi.org/10.1007/978-981-16-1740-9_45	01
International	Communications in Computer and Information Science book series (CCIS, volume 922)	A New Hybrid Backstepping Approach for the Position / Force Control of Mobile Manipulators	Springer, Singapore	2019	978-981-15-1718-1	https://doi.org/10.1007/978-981-15-1718-1_16	01
International	Lecture Notes in Computer Science (LNCS volume 8102)	Design and Simulation of a 3D Actuation System for Magnetic Nano-Particles Delivery System	Springer, Berlin, Heidelberg	2013	978-3-642-40851-9	https://doi.org/10.1007/978-3-642-40852-6_20	19

(e) Invited as Resource Lectures Person/Examiner/Expert

Resource person	**Detail of Event**	**Title of Lecture**	**Date**	**Institution**
Invited talk	International Conference on Dynamical Systems, Control and their Applications	Control of Uncertain Robotics Systems	July 01-03, 2022	Indian Institute of Technology Roorkee
Resource Lecture	Short Term Course on Current Trends in Matematics and	Current Trends in Matematics and Applications	January 15-20, 2018	National Institute of Technology Kurukshetra

	Applications			
Keynote Speaker	National Seminar on Recent Advances in Matematics and its Computational Aspects	Recent Trends in Robot Control and Future Perspectives	November 11-12, 2016	Shaheed Mangal Pandey Government Degree College, Madhav Puram, Meerut

(f) Seminars/Conferences/Workshops Organized: 09

1. Organized a two week ISTE STTP on Electric Power System from June 12-July 15, 2018 at NIT Kurukshetra as Coordinator
2. Organized a Corporate Program on Soft Skills, An Initiative by IIT Bombay X, under National Mission on Education through ICT, MHRD, Govt. of India from September 07-November 12, 2018 at NIT Kurukshetra as Remote Centre Coordinator
3. Organized a Corporate Program on Workplace Communication, An Initiative by IIT Bombay X, under National Mission on Education through ICT, MHRD, Govt. of India from September 07-November 12, 2018 at NIT Kurukshetra as Remote Centre Coordinator
4. Organized 6th International Conference on Smart Computing and Communication from December 07-08, 2017 at NIT Kurukshetra (Proceeding in Scopus indexed Journal) as Organizing Secretary
5. Organized a One Week Short Term Course on Forcasting Models with Applications of Softwares from January 03-07, 2018 at NIT Kurukshetra as Coordinator
6. Organized a One Week Short Term Course on Current Trends in Mathematics and Applications from January 15-20, 2018 at NIT Kurukshetra as Coordinator
7. Organized a One week Short Term Course on Applications of Software for Financial Modeling and Evaluation from February 10-14, 2018 at NIT Kurukshetra as Coordinator
8. Organized a One week Short Term Course on System Analysis, Optimization and Control from February 17-22, 2018 at NIT Kurukshetra as Coordinator
9. Organized a Short Term Course on Research and Professional Skills from May 27-31, 2019 at NIT Kurukshetra as Coordinator

(g) Projects (With Title, Year, Grants, Funding Agency and Collaborations): Nil

Year	Name of Project	Funding Agency	Amount	Duration	
				From	Till

(h) Administrative Positions/Assignments Held

Post	Organization	Duration	
		From	To
Faculty-in-charge Institute Annual Report	NIT Kurukshetra	2019	2022
Faculty-in-charge Sports Activities (Handball)	NIT Kurukshetra	2019	2022
Remote Centre Coordinator for NMEICT online courses	NIT Kurukshetra	2017	2022

Co-cordinator TEQIP III	NIT Kurukshetra	2017	2019
Professor-in-charge Guest house	NIT Kurukshetra	2015	2016
Warden Boys Hostel	NIT Kurukshetra	2014	2016

(i) Seminar/Conference Presentations: 11

1. International Conference on Computing: Theory and Applications (ICCTA'07), ISI Kolkata, India during March 05-07, 2007
2. 13th National Conference on Mechanisms and Machines (NaCoMM07), IISC Bangalore, india during December 12-13, 2007
3. XXXII National Systems Conference, (NSC'08), IIT Roorkee, India during December 17-19, 2008
4. IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2013), Wollongong, NSW, Australia during July 9-12, 2013
5. 6th International Conference on Intelligent Robotics and Applications, ICIRA 2013, Busan, South Korea during September 25-28, 2013
6. 15th International Conference on Control, Automation and Systems (ICCAS 2015), Busan, South Korea during October 13-16, 2015
7. 2nd International Conference on Next Generation Computing Technologies (NGCT 2016), UPES Dehradun, India during October 14-16, 2016
8. National Seminar on Recent Advances in Mathematics and its Computational Aspects, SMPGG PG College Madhavpuram, Meerut, India during November 11-12, 2016
9. 6th International Conference on Smart Computing and Communication, NIT Kurukshetra, India during December 07-08, 2017
10. 5th International Conference on Soft Computing: Theories and Applications (SoCTA 2020), during December 25-27, 2020
11. International E-Conference on Pure and Applied Mathematical Sciences (ICPAMS-2022) during May 04-06, 2022

(j) Memberships of Academic/Professional Bodies: 03

1. IEEE Membership
2. IEEE Robotics & Automation Society Membership
3. IEEE Control Systems Society Membership

(k) Participation in Community Service / Exchange Programme / Consulting Activity

1. National IT Challenge for Youth with Disabilities, 2016, a program of Department of Empowerment of Persons with Disabilities (DIVYANGJAN), Government of India
2. National IT Challenge for Youth with Disabilities, 2017, a program of Department of Empowerment of Persons with Disabilities (DIVYANGJAN), Government of India
3. National IT Challenge for Youth with Disabilities, 2018, a program of Department of Empowerment of Persons with Disabilities (DIVYANGJAN), Government of Indi.
4. National IT Challenge for Youth with Disabilities, 2019, a program of Department of Empowerment of Persons with Disabilities (DIVYANGJAN), Government of India
5. One day awareness program on Financial Literacy for Promotion to Digital Economy, under Unnat Bharat Abhiyan mission at Village Snehri, Kurukshetra on December 25, 2017
6. One day awareness program on Financial Literacy for Promotion to Digital Economy, under Unnat Bharat Abhiyan mission at Village Jyotisar, Kurukshetra on December 31, 2017
7. One day awareness program on Financial Literacy for Promotion to Digital Economy, under Unnat Bharat Abhiyan mission at Village Alampur, Kurukshetra on January 14,

2018

8. One day awareness programme on National Mission on Education through Information and Communication Technology (NMEICT) at NITTTR Chandigarh on September 27, 2014

(l) International Academic Exposure

1. Postdoctoral Researcher at Ajou University, Suwon, South Korea during 2009-2012
2. Academic Research Professor at Gyeongsang National University, Jinju, South Korea during 2012-2013
3. Participated in 15th International Conference on Control, Automation and Systems (ICCAS 2015) held in Busan, South Korea to present a paper, during October 13-16, 2015

(m) Any Other Details

Signature of Faculty Member