NAME		Kusum Deep
MAIDEN NAME		Kusum Shanker

OFFICIAL ADDRESS Professor,
Department of Mathematics,
Indian Institute of Technology Roorkee,
Roorkee – 247667 , India

RESIDENTIAL ADDRESS House No. 413/4, 35 – A, Civil Lines,
Roorkee – 247667 , India

TELEPHONES ++91 – (0) 1332-285339 (Office)
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CELL 9837164078
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EMAIL kusumfma@iitr.ernet.in,
kusumdeep@gmail.com

OFFICIAL WEB SITE http://www.iitr.ernet.in/~MA/kusumfma

DATE AND PLACE OF BIRTH August 15, 1958, Jalandhar, India

SUBJECT Mathematics

SPECIALIZATIONS /RESEARCH INTERESTS
Nature Inspired Optimization Techniques
Genetic Algorithms
Particle Swarm Optimization
Parallel Computing

TEACHING/ RESEARCH EXPERIENCE

	Period	Duration	Teaching/ Research
Fellow Scientist, CBRI, Roorkee	15.6.1988 to 19.12.1989	1 year, 6 mths	Research
Scientist C, CBRI, Roorkee	20.12.1989 to 24.6.1996	6 years, 6 mths	Research
Assistant Professor, Maths.Dept.,IITRoorkee	25.6.1996 to 4.5.2004	8 years	Teaching and Research
Associate Professor, Maths.Dept.,IITRoorkee	5.5.2004 to 22.10.2012	8 years, 5 mths	Teaching and Research
Professor, Maths.Dept.,IITRoorkee	23.10.2012 to date	4 year,3 mths.	Teaching and Research

<u>As a student</u>
1. First in Class, AIHS., 1974.
2. UGC National Merit Scholarship, B. Sc. (Hons.), 1975-78.
3. University Gold Medal, M.Phil, 1984.
4. UGC National Education Test, 1984.

<u>Before joining IITR</u>
5. Khosla Research Award, University of Roorkee, 1991.
6. Post Doctoral Research funded by Commission of European Communities, Brussels, at Department of Computer Studies, Loughborough University of Technology, Loughborough, U.K. from November 1993 to November 1994.

<u>After joining IITR</u>
7. Research Award (Career Award), UGC, 2002 – 2005.
8. Sponsored Research Project under Thrust Area, MHRD, 2005– 07.
9. Starred Performance, IIT – Roorkee Faculty, 2001 – 02 & 2002–03.
10. Starred Performance, IIT – Roorkee Faculty, 2003 – 04.
11. Starred Performance, IIT – Roorkee Faculty, 2004 – 05.
12. Special facilitation in memory of late Prof. M. C. Puri, during 40th Convention of ORSI, Golden Jubilee Celebrations, New Delhi, Dec. 2007.
13. Best Technical Paper Award: The following research paper jointly written with V. K. Goel, Manoj Thakur and B. K. Awasthi has received the best technical paper published in the Railway Bulletin of Indian Railways for the year 2005. The award carries a cash prize of Rs. 1000/-.
    ”Mathematical Model to represent the Track Geometry Variations using PSD”, Railway Bulletin of Indian Railways, Vol. LXI, No. 312-313, pp.1–9, Feb–May, 2005.
14. Nominated as EXPERT, Dept. of Science and Technology, New Delhi.
15. Nominated as Senior Member, Operations Research Society of India.
16. Nominated as Senior Life Member, Computer Society of India.
17. President, Soft Computing Research Society.
18. Received Best Paper Award for the paper
    Vanita Garg and **KUSUM DEEP**: "Optimal Extraction of Bioactive Compounds from Gardenia Using Laplacian Biogoegraphy Based Optimization", 2nd International Conference on Harmony Search Algorithms, Seoul, Korea University, Korea, August 19-21, 2015, Advances in Intelligent Systems and Computing, Springer, Vol. 382, pp.251-258, 2015.

THESIS SUPERVISED AT IIT ROORKEE

	Total
Awarded/ submitted	15
Ongoing	4
Total	19

M.Tech	1
M.Phil	6
MCA	52
M.Sc.	45
IDD	6

SPONSORED PROJECTS   8 – Completed
                                          1 - In progress

CONSULTANCY PROJECT   3 – Completed

RESEARCH PUBLICATIONS
        In Referred Journals   93
        In Conference Proceedings   77
        Book Chapters   9

Google Scholar Citation indices as on January 15, 2017		
	All	Since 2009
Citations	1688	1377
h-index	17	16
i10-index	30	27

TEXT BOOK AUTHORED
"Optimization Techniques", jointly with Prof. C. Mohan
Indian Ed., New Age, New Delhi, 2009 and
Foreign Ed., New Age Science, UK, 2009.

SPECIAL ISSUE OF JOURNAL EDITED
**Edited Special Issue "Bio-Inspired Techniques for Complex Systems, Int. J.
Advanced Intelligence Paradigms, Vol. 5, Nos. 1 & 2, 2013.**
Edited Special Issue "Optimization" of Opsearch Journal, Springer, Vol. I, March 2009.
Edited Special Issue "Optimization" of Opsearch Journal, Springer, Vol. 2, June 2009.

INTERNATIONAL CONFERENCE PROCEEDINGS EDIITED

Series: Advances in Intelligent Systems and Computing.
Proceedings of the Sixth International Conference on Soft Computing for Problem
Solving, SocProS 2016.
Editors: Deep, K., Bansal,J.C.,Das,K.N., Lal, A.K., Garg, H., Nagar, A.K., Pant, M. (Eds.)
http://www.springer.com/in/book/9789811033247

Series: Advances in Intelligent Systems and Computing, Vol. 416, 2016
Proceedings of the Fifth International Conference on Soft Computing for Problem
Solving SocProS 2015, Volume 1.
Editors: Pant, M., **Deep, K**., Bansal, J.C., Nagar, A., Das, K.N. (Eds.)
http://www.springer.com/in/book/9789811004476

Series: Advances in Intelligent Systems and Computing, Vol. 417, 2016
Proceedings of the Fifth International Conference on Soft Computing for Problem
Solving SocProS 2015, Volume 2.
Editors: Pant, M., **Deep, K**., Bansal, J.C., Nagar, A., Das, K.N. (Eds.)
http://www.springer.com/in/book/9789811004506

Series: Advances in Intelligent Systems and Computing, Vol. 335, 2014
Proceedings of the Fourth International Conference on Soft Computing for Problem
Solving SocProS 2014, Volume 1.
Editors: Das, K.N., **Deep, K**., Pant, M., Bansal, J.C., Nagar, A. (Eds.)
http://www.springer.com/in/book/9788132222163

Series: Advances in Intelligent Systems and Computing, Vol. 336, 2014
Proceedings of the Fourth International Conference on Soft Computing for Problem Solving SocProS 2014, Volume 2.
Editors: Das, K.N., **Deep, K**., Pant, M., Bansal, J.C., Nagar, A. (Eds.)
http://www.springer.com/in/book/9788132222194

Series: Advances in Intelligent Systems and Computing, Vol. 258, 2014
Proceedings of the Third International Conference on Soft Computing for Problem Solving SocProS 2013, Volume 1.
Pant, M., **Deep, K**., Nagar, A., Bansal, J.C. (Eds.)
http://www.springer.com/gp/book/9788132217701

Series: Advances in Intelligent Systems and Computing, Vol. 259, 2014
Proceedings of the Third International Conference on Soft Computing for Problem Solving SocProS 2013, Volume 2.
Pant, M., **Deep, K.,** Nagar, A., Bansal, J.C. (Eds.)
http://www.springer.com/gp/book/9788132217671

Series: Advances in Intelligent Systems and Computing, Vol. 236, 2013
Proceedings of the Second International Conference on Soft Computing for Problem Solving (SocProS 2012), December 28-30, 2012
Babu, B.V.; Nagar, A.; **Deep, K**.; Pant, M.; Bansal, J.C.; Ray, K.; Gupta, U. (Eds.)
ISBN 978-81-322-1601-8, 2013
http://www.springer.com/gp/book/9788132216018

Series: Advances in Intelligent Systems and Computing, Vol. 201,
Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012), Springer, J. C. Bansal, P. K. Singh, **Kusum Deep**, Millie Pant, Atulya K. Nagar (Eds.)

Series: Advances in Intelligent Systems and Computing, Vol. 202,
Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012), Springer, J. C. Bansal, P. K. Singh, **Kusum Deep**, Millie Pant, Atulya K. Nagar (Eds.)

Series: Advances in Intelligent and Soft Computing, Vol. 130, 2012
Kusum Deep, Atulya Nagar, Millie Pant, Jagdish Chand Bansal (Eds.), ISBN 978-81-322-0486-2 , Springer. http://www.springer.com/gp/book/9788132204862

Series: Advances in Intelligent and Soft Computing, Vol. 131, 2012
Kusum Deep, Atulya Nagar, Millie Pant, Jagdish Chand Bansal (Eds.), ISBN 978-81-322-0490-9, Springer. http://www.springer.com/gp/book/9788132204909

EXECUTIVE EDITOR
International Journal of Swarm Intelligence, Inderscience (www.inderscience.com/ijsi)

MEMBER OF EDITORIAL BOARD
1. Scientific Journal International, **USA.**
2. American J. of Operations Research, Scientific Research Pub., **USA.**
3. World Journal of Modeling and Simulation, World Academic Union, **UK.**
4. International Journal of Computational Intelligence Studies, **Inderscience**
5. Inter. J. of Knowledge Engineering & Soft Data Paradigms, **Inderscience.**
6. Inter. J. of Advanced Intelligence Paradigms (IJAIP**), Inderscience.**
7. Inter. J. of Convergence Computing, **Inderscience**

8. Inter. J. of Combinatorial Optimization Problems and Informatics, **Mexico.**
9. Journal of Hybrid Computing Research, **Serial Publishers.**
10. Inter. J. of Applied Evolutionary Computations, **IGI Publisher, USA.**
11. Inter. J. of Swarm Intelligence Research, **IGI Publisher, USA.**
12. Inter. J. of Intelligent Learning Systems and Applications, **Scientific Research Publishing.**

REVIEWER OF JOURNALS
1. **IEEE** Transactions on Automation Science and Engineering
2. **IEEE** Transactions on System, Man and Cybernetics – Part A, Systems and Humans.
3. **IEEE** Transaction of Evolutionary Computations.
4. Engineering Applications of Artificial Intelligence, **Elsevier.**
5. Mathematical and Computer Modeling, **Elsevier.**
6. Information Sciences, **Elsevier.**
7. Applied Mathematics and Computations, **Elsevier.**
8. Applied Soft Computing, **Elsevier.**
9. Artificial Intelligence, **Elsevier.**
10. Natural Computing, **Springer.**
11. Applied Intelligence, **Springer.**
12. Opsearch, Journal of Operational Research Society of India, **Springer**
13. Engineering Optimization, **Taylor and Francis.**
14. Knowledge-based & Intelligent Engineering Systems, **IOS Press, Netherlands.**
15. Majlesi Journal of Electrical Engineering, **DOAJ.**
16. Advances in Fuzzy Systems, Hindawi Publishing Corporation, **USA and Egypt**.
17. Iranian Journal of Fuzzy Systems, University of Sistan and Baluchistan, **Iran.**
18. Inter. Journal of Information Technology & Decision Making, **World Scientific.**
19. International Journal of Management and Systems, New Delhi.

INTERNATIONAL COLLABORATION
Prof. Atulya K. Nagar
Professor of Computer and Mathematical Sciences
Head of Department of Computer Science
Liverpool Hope University
Liverpool L16 9JD. **UK.**

INDUSTRY INTERACTION
1. Dabur. **New Delhi**
2. Wadia Institute of Himalayan Geology, **Dehradun**
3. Snow and Avalanche Study Establishment, **DRDO Chandigarh**

PATENT
Patent filing in progress jointly with Prof. V. K. Katiyar and Dr. Shashi Barak entitled:
Extraction optimization of markers or bioactive compounds from ashwagandha (Withania Somnifera) using Real Coded Genetic Algorithms

MEMBERSHIP OF PROFESSIONAL BODIES
International
1. Member, IEEE (No. 90526596)
2. Machine Intelligence Lab, (MIR Labs), USA

3. Senior Member, International Association of Computer Science and Information Technology, Singapore, Member No.: 80342828.
4. Member, Intelligent Systems, Knowledge Based and Intelligent Information and Engineering Systems, KES International, England
5. Researcher ID : C-5028-2011
6. MetaPress ID: 252-19-640

   National
7. President, Soft Computing Research Society
8. Secretary, Forum of Interdisciplinary Mathematics
9. Senior Life Member, Computer Society of India (00011847)
10. Life Member, Indian Mathematical Society (S-86-088)
11. Life Member, Operations Research Society of India
12. Life Member, Indian Science Congress, L9576
13. Life Member, Indian Society of Applied and Industrial Mathematics (K-84)
14. Member, Vijnana Parishad of India
15. Member, Advance Computing Society of India
16. Universal Association of Computer and Electronics Engineers (ID: IN0078698.)

CONFERENCES ORGANIZED

1. Convener, 5th International Conference on Soft Computing for Problem Solving, December 18-20, 2015, Proceedings by Springer, IIT Roorkee, India.
2. Convener, 4th International Conference on Soft Computing for Problem Solving, December 27-29, 2014, Proceedings by Springer, NIT Silchar, India.
3. Convener, 3rd International Conference on Soft Computing for Problem Solving, December 26-28, 2013, Proceedings by Springer, Greater Noida Extension Centre of IIT Roorkee.
4. Special Session on "Swarm Intelligence for Global Optimization", 2013 IEEE Symposium Series on Computational Intelligence, April 15-19, 2013, **Singapore.**
5. Publicity Chair, IEEE Congress on Evolutionary Computation, June 20-25, 2013, **Mexico.**
6. Asia liaison Officer & Senior Program Committee Member, 4th IEEE International Conference on Information, Intelligence, Systems and Applications, July 10-12, 2013, Piraeus (Athens), **Greece.**
7. Convener, 2nd International Conference on Soft Computing for Problem Solving, December 28-30, 2012, JKL University, Proceedings by Springer, **Jaipur.**
8. Convener, 7th International Conference on Bio-Inspired Theories and Applications, Dec 14-16, 2012, ABV-IIITM, Proceedings by Springer, **Gwalior.**
9. Convener, International Conference on Soft Computing for Problem Solving (SocProS 2011) December 20-22, 2011, IIT Roorkee Campus.

FORTHCOMING EVENTS BEING ORGANIZED
1. Convener, 6th International Conference on Soft Computing for Problem Solving, December 23-24, 2016, Proceedings by Springer (pending approval), Thapar University, Patiala, India.

COURSES CONDUCTED
1. Co-ordinator, QIP Sponsored One Day Workshop, CUDA Programming, Dec 27, 2013, Greater Noida Extension Centre of IIT Roorkee.
2. Coordinator, AICTE Sponsored QIP Short Term Course, Recent Advances in Genetic Algorithms and their Applications in Engineering Design, June 25-29, 2012, IIT Roorkee.

3. Coordinator, **MIR Labs, USA** sponsored Machine Intelligence Research Lab Day, **June 13, 2011**, The Institution of Engineers (India), Roorkee Local Chapter.
4. Coordinator, **DST sponsored Short Term Course** on "Nature Inspired Optimization Algorithms: Recent Trends, Theory and Applications", **March 25 – 28, 2011**, The Institution of Engineers (India), Roorkee Local Centre.
5. Coordinator, One day Workshop entitled "Optimization Tool Box", under **MHRD** sponsored Project SOS, **February, 16, 2010**, Electrical Eng. Dept. IIT Roorkee.
6. Coordinator, Course on "Recent Advances in Optimization Techniques & their Applications", **May 20 – 24, 2009**, **Continuing Education Dept**, IIT Roorkee.
7. **Finishing School Programme**, Continuing Education, IIT R, 2009.
8. **Finishing School Programme**, Continuing Education, IIT R, 2008.
9. **Finishing School Programme**, Continuing Education, IIT R, 2007.
10. **Live broadcast** from EMMRC, IITR, entitled "Linear Programming", Oct. 25, 2007.
11. Delivered 6 lectures on "Use of Optimization in Modeling Real Life Problems" during AICTE Sponsored Short Term Course on "Mathematical Modeling of Real Life Problems", July 4 – 15, 2005.

EDUSAT TALK
1. Live broadcast from EMMRC, IITR, on October 25, 2008 entitled "Linear Programming"

ADMINISTRATION
DRC Chairperson, Maths. Dept from September 1, 2014 till August 31, 2016.
OC Time Table, Maths. Dept, from September 2013 to August 31, 2014.
Supt. Exam, Maths. Dept, 2011 to 2013.
Member, Institute Research Committee, IIT Roorkee, September 1, 2014 till date.
Member, Senate IIT Roorkee, from 1.1.2012 to date.
Member, Continuing Education Committee, IIT Roorkee, 1.7.2011 to 30.6.2013.
Co-ordinator, MCA Final Year, Autumn Semester, 2010-2011.
Member, Grade Moderation Committee, MCA, Autumn Semester, 2010-2011.
Member, Departmental Research Committee, Maths. Dept, Aug. 18, 2010.
Member, Programme Faculty Board, MCA, Maths. Dept, IITR, Sept 13, 2010

INVITED TALKS ABROAD
1. Korea University, **Korea**, August 19-21, 2015.
2. Science and Engineering Faculty, Queensland University of Technology, Brisbane, **Australia,** June 13, 2012.
3. Centre for Applicable Mathematics and Systems Science (CAMSS), Liverpool Hope University, Liverpool, **United Kingdom**, February 1, 2011.
4. IEEE Fifth International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2010), Liverpool Hope University, Liverpool, **United Kingdom**, September 8 - 10, 2010.
5. National University of **Singapore,** Sept. 24, 2007.
6. Univ. of Birmingham, **United Kingdom**, Oct. 12, 2006.
7. Univ. of Nottingham, **United Kingdom,** Oct. 14, 2006.

INVITED TALKS IN INDIA

1. Chief Guest and Keynote address during 3 days National Workshop on Nature Inspired Optimization Techniques", at MNIT Jaipur on October 21, 2016.
2. Invited Talk on Optimization Techniques at IIT Roorkee, October 15, 2016.
3. Invited Talk at JIIT Noida, Sept 19, 2016.

4. Invited Talk, One day workshop on "Nature Inspired Algorithms and its' Applications in Engineering", March 28, 2016, Gautam Buddha University, Greater Noida.
5. Invited Talk, One day workshop on Nature Inspired Optimization Techniques, March 19, 2016, South Asian University.
6. Invited Talk, DST sponsored "National Programme for Training of Scientists & Technologists Working in Government Sector on Soft Computing Techniques for Optimization" , Gwalior, from 17th to 21st Feb, 2014 on Feb 18, 2014.
7. Invited Talk: R Systems Pvt. Ltd, Noida, Feb 11, 2014.
8. Invited Talk: South Asian University, New Delhi, Feb 5, 2014.
9. Keynote address: "International Conference on Reliability, Optimization and Information Technology", Feb 6-8, 2014 on Feb 6, 2014.
10. Invited Speaker: Workshop on "Mathematical Modeling and Computational Techniques", held under the auspices of University Institute of Engineering and Technology, Department of Mathematics, **Punjab University, Chandigarh**, Sept. 27-28, 2013, Title of Talk: "A Tutorial on Particle Swarm Optimization".
11. Chief Guest and Keynote address: International Conference on Computational Intelligence, April 25-26, 2013, Sethu Institute of Technology, **Pullour, Tamil Nadu.** Title of Talk: "Can advancements in Nature Inspired Optimization Techniques solve complex real life problems?"
12. Invited Speaker, "Colloquium in Mathematics in the Thrust Areas of Algebra, Number Theory and Applied Mathematics", **Panjab University, Chandigarh**, Feb.22-23, 2013, Title of Talk: "Can advancements in Nature Inspired Optimization Techniques solve complex real life problems?"
13. Invited Speaker, International Conference on Optimization Modelling and Applications**, University of Delhi**, Nov. 29-Dec 1, 2012, Title of Talk: "A Rainbow of Recent Nature Inspired Optimization Techniques".
14. Invited speaker, 6th International Conference on Quality, Reliability, Infocom Technology and Industrial Technology Management, **University of Delhi**, Nov 26-28, 2012, Title of Talk: "Can advancements in Nature Inspired Optimization Techniques solve complex real life problems?"
15. Resource Person, Workshop on Scientific Computing: Theories and Practices, October 8-13, 2012, Gurukul Kangri University, **Haridwar.**
16. Resource Person, Continuing Education Program "Soft Computing Methods for Data Mining & Decision Making",**DRDO, Chandigarh,** July 2–6, 2012.
17. Resource Person at the DST Sponsored Short Term Course on Recents in Evolutionary Optimization Techniques and Applications (REOTA-2012), **NIT Silchar**, June 1 – 7, 2012.
18. Resource Person, Parul Institute of Engg. & Tech., **Vadodara,** May 3-5, 2012.
19. Resource Person at Two Days Workshop on Soft Computing and Knowledge Mining, March 29–30, 2011, Department of Computer Applications, **Maulana Azad National Institute of Technology, Bhopal.**
20. Delivered Expert Lecture in MPCST Sponsored National Seminar RAWT **at NRI Institute of Information Science and Technology, Bhopal,** 30th March , 2011.
21. Resource Person at National Workshop on "Meta Heuristics and IT Researchers", **ABVIIITM, Gwalior**, November 22-23, 2010.
22. Resource Person at **Meerut Engineering College**, 2009.
23. "Nature Inspired Optimization for Engineering Design", Second National Conference on Mathematical Techniques Emerging Paradigms for Electronics & IT Industries (MATEIT 2008) held at Deen Dayal Upadhaya College, **University of Delhi**, September 24 – 25, 2008.
24. "Recent Advances in Real Coded Genetic Algorithms", 40th Annual Convention of ORSI (Golden Jubilee Celebrations) **INSA, Delhi**, Dec.4–6, 2007

25. "Genetic Algorithms – I" and Genetic Algorithms – II", Workshop on Optimization &Applications, **University of Delhi, Delhi Chapter, ORSI,** Nov. 29–Dec. 3, 2007.
26. "Solution of Real Life Optimization Problems using Heuristics", OptiMA – 2007: National Conference on Mathematical Modelling Optimization and Their Applications", **New Delhi,** April 28 – 29, 2007.
27. "Population based Heuristics for Optimization of Engineering Design Problems", 51st Congress of Indian Society of Theoretical and Applied Mechanics, ISTAM – 2006, **Vishakapatanam,** December 18 – 21, 2006.
28. "Numerical Optimization of Real Life Problems", First National Conference on Mathematical Techniques Emerging Paradigms for Electronics & IT Industries (MATEIT 2006) held at Deen Dayal Upadhaya College, **Univ. of Delhi,** March 22–25, 2006.
29. "Numerical Techniques for Global Optimal Solution of Nonlinear Optimization Problems and their Applications to Real Life Problems", Department of Mathematics, Sri Padmavati Mahila Visvavidayala, **Tirupati,** March 21-22, 2005.

COURSES DEVELOPED
1. Advanced Nature Inspired Optimization Techniques**, Pre-PhD**
2. Evolutionary Algorithms for **Pre-PhD**
3. Parallel Computing, for **M. Phil**
4. Parallel and Distributed Computing for **MCA.**
5. Numerical Optimization for **5 Year Integrated Course**.
6. Operations Research – I for **5 Year Integrated Course**
7. Operations Research – II for **5 Year Integrated Course**
8. Operations Research – III for **5 Year Integrated Course**
9. Soft Computing for **5 Year Integrated Course**

INFRASTRUCTURE ESTABLISHED
Parallel Computing Lab, MCA Building, Maths. Dept. under MHRD sponsored Project.

TRAVEL ABROAD
Australia, United Kingdom, Russia, Korea, Iraq, Singapore, Netherlands, France.

SPONSORED RESEARCH PROJECTS

No.	Year of Funding	Sponsoring Organisation	Title of Project	Amount of Grant	Co-Investigators
1	1992-95	DST	Prognostic Modeling of Landslides	Rs. 4,34,400/-	Dr. G. S. Mehrotra
2	1993-94	Commission of European Communities, Brussels	Use of Parallel Heuristic Algorithms for use in Global Optimization	ECU $ 28,836	-
3	1996-97	UGC	Optimization of some Non-convex Nonlinear Programming Test Problems using RST2 Algorithm	Rs. 10,000/-	-
4	1999-00	UGC	Neural Network Based Algorithms for Global Optimization	Rs. 5,000/-	-
5	2002-05	UGC	Genetic Algorithms in Defence	Rs. 12 lakhs.	-
6	2005–07	MHRD	Migrating Host Programs to Grids by Adaptive Compilation	Rs. 8.5 lakhs.	-
7	2008–11	DST	Study for assessment, estimation and prevention of non-point source ground water contamination in Fuzzy environment using Genetic Algorithms and applying High Performance Computing	Rs. 13.97 lakhs	Dr. Millie Pant
8	2013-14	DST	Mobility of Human Resource Development in Mathematics	Rs. 1.7 Lakhs	-
9	2014-16 (On-going)	DST-RFBR	Hybrid Nature Inspired Algorithms for Optimization Problems in Financial Mathematics	Rs. 18 lakhs	Dr. Millie Pant

CONSULTANCY PROJECTS

No.	Year of Funding	Sponsoring Organisation	Title of Project	Amount	Co-Investigators
1	2009–12 (Completed)	MHRD under Mission on Education through ICT	Open Source tools, simulation tools, software tools under Mission on Education through ICT- Optimization Tool Box	Rs. 2.5 crores	Prof. S. C. Saxena Prof. J. D. Sharma Dr. Millie Pant
2	2009-2010	NPTEL Phase II Courses Development (Video package)	Operations Research	Rs. 2 lakhs	-
3	2011-13	SASE, DRDO, Chandigarh	Optimization of Parametric Weights of Nearest Neighbour Model for Avalanche Forecasting	Rs. 15 Lakhs	-

<u>**2016**</u>
1. Amarjeet Singh and **KUSUM DEEP**: "Hybridizing Gravitational Search Algorithms with Real Coded Genetic Algorithms for Structural Engineering Design Problem", accepted, Opsearch, Spinger, 2017.
2. Kavita Gupta, **KUSUM DEEP** and J. C. Bansal: "Spider monkey optimization algorithm for constrained optimization problems", accepted, Soft Computing, Springer, DOI 10.1007/s00500-016-2419-0.
3. Vanita Garg and **KUSUM DEEP**: "Constrained Laplacian Biogeography-Based Optimization Algorithm", accepted, International Journal of System Assurance Engineering and Management,Springer, DOI :10.1007/s13198-016-0539-7.
4. Anupam Yadav, **KUSUM DEEP,** Joong Hoon Kim and Atulya K Nagar: "Gravitational Swarm Optimizer for Global Optimization", Swarm and Evolutionary Computation, Elsevier, Available online 2 August 2016. **(Impact Factor 2.96).**
5. Amreek Singh, **KUSUM DEEP** and Pallavi Grover: "A Novel Approach to Accelerate Calibration Process of K-Nearest Neighbours Classifier Using GPU", accepted, Journal of Parallel and Distributed Computing, Elsevier.
6. Garima Singh and **KUSUM DEEP**: "Effectiveness of new Multiple-PSO based Membrane Optimization Algorithms on CEC 2014 Benchmarks and Iris Classification",Natural Computing, Springer pp.1-14, First online July 2016, doi:10.1007/s11047-016-9573-2, (**Impact Factor = 0.683)**
7. Vanita Garg and **KUSUM DEEP**: Efficient mutation strategies embedded in Laplacian Biogeography-Based Optimization. International Journal of Applied Evolutionary Computation, 7(2), Article 2, pp. 12-44, 2016.
8. Garima Singh and **KUSUM DEEP**: "A New Membrane Algorithm using the rules of Particle Swarm Optimization incorporated within the framework of Cell-like P-systems to solve Sudoku", Applied Soft Computing, 45, 27-39, 2016 (Elsevier Publication **(Impact Factor 2.14)**
9. Vanita Garg and **KUSUM DEEP**: "Performance of Laplacian Biogeography-Based Optimization Algorithm on CEC 2014 continuous optimization benchmarks and Camera Calibration Problem", Swarm and Evolutionary Computation, pp. 132-144, 2016. **(Impact Factor 2.96)**
10. Kedar Nath Das, Raghav Prasad and **KUSUM DEEP**: "Design and Applications of a new DE-PSO-DE algorithm for Unconstrained Optimization Problems", Accepted, International Journal of Swarm Intelligence, Inderscience, 2016.
11. Garima Singh and **KUSUM DEEP**: "Use of Membrane Algorithms for Solving Constrained Engineering Design Problems", World Journal of Modelling and Simulation, UK, Vol. 12, No.3, pp. 189-203, August 2016.

<u>**2015**</u>
12. Garima Singh and **KUSUM DEEP**: "Cell-like P-systems coupled with rules of Particle Swarm Optimization to Solve Blasius Differential Equation". International Journal of Swarm Intelligence, Inderscience (Accepted), 2015.
13. Hira Zaheer, Millie Pant, Sushil Kumar, Oleg Monakhov, Emilia Monakhova, **KUSUM DEEP**: "A new guiding force strategy for differential evolution", International Journal of System Assurance Engineering and Management, pp.1-14, 2015.
14. Amarjeet Singh and **KUSUM DEEP**, "Real Coded Genetic Algorithm Operators Embedded in Gravitational Search Algorithm for Continuous Optimization",

International Journal of Intelligent Systems and Applications (IJISA) 7(12), 1-22, 2015. DOI: 10.5815/ijisa.2015.12.01

15. Kavita Gupta, **KUSUM DEEP** and J. C. Bansal: "Improving the local search ability of Spider Monkey Optimization algorithm using Quadratic Approximation for unconstrained optimization", In Press, Computational Intelligence, 2015, DOI: 10.1111/coin.12081.

16. Amarjeet Singh and **KUSUM DEEP**: "Novel Hybridized variants of Gravitational Search Algorithm for Constraint Optimization", International Journal of Swarm Intelligence, 2015.(in press)

17. Amarjeet Singh and **KUSUM DEEP:** "New Variants of Glowworm Swarm Optimization Based on Step Size", International Journal of System Assurance Engineering and Management. 6(3), 286-296, 2015.

18. Amreek Singh, Bhanu Damir, **KUSUM DEEP** and Ashwagosha Ganju: Calibration of Nearest Neighbours Model for Avalanche Forecasting", Cold Regions Science and Technology, Vol. 109, pp. 33-42, January 2015, **Impact Factor 1.367.**

2014

19. Garima Singh, **KUSUM DEEP** and Atulya K. Nagar: "Cell-like P-Systems Based on Rules of Particle Swarm Optimization", Applied Mathematics and Computations, Vol. 246, pp. 546-560, Nov.1,2014. **Impact Factor 1.551**

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38. **KUSUM DEEP**, Shashi and V. K. Katiyar: "Global Optimization of Lennard-Jones Potential using Newly Developed Real Coded Genetic Algorithms", IEEE CSNT, Shri Mata Vaishno Devi University (SMVDU) Katra, Jammu, June 3 – 5, 2011, proceedings IEEE Explore, pp. 614-618.

39. **KUSUM DEEP** and Kedar Nath Das: "Hybrid Binary Coded Genetic Algorithm for Constrained Optimization", P1121103467. ICGST International Conference on Artificial Intelligence and Machine Learning (AIML-11), 12 - 14 April 2011, **Dubai, UAE,** pp.135-141, http://www.icgst.com/con11/aiml11/proceedings/P1121103467.pdf.

40. Pinkey Chauhan, **KUSUM DEEP** and Millie Pant: "Power Mutation embedded modified PSO for Global Optimization Problems", International Conference on Swarm, Evolutionary and Memetic Computing, SRM University, Chennai, Dec. 16-18, 2010. Proceedings, LNCS, Springer, Vol. 6466/2010, pp. 139-146, DOI: 10.1007/978-3-642-17563-3_17.

41. J. C. Bansal and **KUSUM DEEP: "**Quadratic Approximation PSO for Economic Dispatch Problems with Valve-point effect", International Conference on Swarm, Evolutionary & Memetic Computing, SRM University, Chennai, Dec. 16-18, 2010, Proc., Springer, pp. 460-467, http://www.springerlink.com/content/5v2x2136t3701100/?MUD=MP.

42. Kedar Nath Das and **KUSUM DEEP**: "Minimum Labeling Spanning Tree Based on Genetic Algorithms: An overview", Power Control and Optimization (PCO Global 2010), Dec. 2–4, 2010**, Malaysia**, Proceedings, pp. 31 – 35.

43. Radha Thangraj, Millie Pant, Ajith Abraham, **KUSUM DEEP** and Vaclav Snasel: "Differential Evolution using a Localized Cauchy Mutation Operator", IEEE International Conference on Systems, Man and Cybernetics, **Istanbul, Turkey**, October 10–13, 2010, pp.3710–3716, DOI: 10.1109/ICSMC.2010.5641850

44. **KUSUM DEEP** and Jagdish Chand Bansal: "Particle Swarm Optimization for Economic Dispatch Problems with Valve-point Effects", The IEEE Fifth International Conference on Bio-Inspired Computing: Theories and Applications, BIC-TA 2010, **Liverpool, United Kingdom**, September 8-10, 2010, pp. 1395–1398, IEEE Explore, DOI: 10.1109/BICTA.2010.5645606.

45. **KUSUM DEEP**, Sunita, Millie Pant: "Modified Parallel Particle Swarm Optimization for Global Optimization Using Message Passing Interface", The IEEE Fifth International Conference on Bio-Inspired Computing: Theories and Applications, BIC-TA 2010, **Liverpool Hope University, Liverpool, United Kingdom,** September 8 - 10, 2010, pp. 1451 – 1458, IEEE Explore, DOI: 10.1109/BICTA.2010.5645280.

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47. Shashi, **KUSUM DEEP** and V. K. Katiyar **"**Multi-objective Extraction Optimization of Bioactive Compounds from Gardenia using Real Coded Genetic Algorithms", 6th World Congress on Biomechanics, **Singapore,** August 2010, IFMBE Proceedings, 2010, Volume 31, Part 6, pp.1463-1466, DOI: 10.1007/978-3-642-14515-5_373

48. Shashi, **KUSUM DEEP**, K.P. Singh and V.K. Katiyar: "Global Optimization of Molecular Potential Energy Function Using a Real Coded Genetic Algorithm", 2010 International Conference on Bioinformatics & Computational Biology, Las Vegas,USA, 2010, pp.442-447, http://w3.balikesir.edu.tr/~ijocta/index.php/files/article/viewFile/44/26

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December 9-11, 2009, Coimbatore, IEEE Explore, pp. 1121-1126, DOI: 10.1109/NABIC.2009.5393814

50. Madhuri and **KUSUM DEEP**: "A State-of-the-Art Review of Population Based Parallel Meta-heuristics", World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), December 9-11, 2009, Coimbatore, IEEE Explore, pp. 1604-1607, 10.1109/NABIC.2009.5393657.

51. **KUSUM DEEP**, Pinkey Chauhan, J. C. Bansal "Solving Nonconvex Trim Loss Problem using an Efficient Hybrid Particle Swarm Optimization", Nature & Biologically Inspired Computing, Dec.9-11, 2009, Coimbatore, IEEE Explore, pp.1608-1611, DOI: 10.1109/NABIC.2009.5393658

52. **KUSUM DEEP** and J. C. Bansal: "Optimization of Directional Overcurrent Relay Times Using Laplace Crossover Particle Swarm Optimization (LXPSO)", World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), December 9-11, 2009, **Coimbatore,** IEEE Explore, pp. 1608–1611, DOI: 10.1109/NABIC.2009.5393658

53. Shashi, **KUSUM DEEP** and V. K. Katiyar: "Finding Stable Conformations of small molecules using Real Coded Genetic Algorithm", World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), Dec. 9-11, 2009, **Coimbatore,** IEEE Explore pp.342-348, DOI: 10.1109/NABIC.2009.5393748

54. J. C. BANSAL, **KUSUM DEEP,** Kalyan Veeramachaneni and Lisa Osadciw, "Information Sharing Strategy among Particles in Particle Swarm Optimization Using Laplacian Operator", IEEE Swarm Intelligence Symposium (SIS 2009), March 30-April 2, Nashville, **USA,** pp. 30-36.

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56. J. C. BANSAL and **KUSUM DEEP**, Optimization of Directional Overcurrent Relay Times by Particle Swarm Optimization, IEEE Swarm Intelligence, Symposium (SIS 2008), St. Louis, Missouri, **USA,** Sept. 21 – 23, 2008, Proceedings, pp.1–7.

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59. **KUSUM DEEP**, M. L. Kansal: and K. P. Singh: "A Fuzzy Interactive Method for Multiobjective Engineering Design Problems", First International Conference on Emerging Trends in Engineering and Technology (ICETET 2008), Nagpur, July 16-18, 2008, IEEE Explore, pp. 559-563, DOI: 10.1109/ICETET.2008.147

60. **KUSUM DEEP** and J. C. BANSAL, Performance Analysis of CNC Turning Process via Particle Swarm Optimization, Nature Inspired Cooperative Strategies for Optimization, (NICSO 2007), **Italy,** Proceedings, Studies in Computational Intelligence, Springer Verlag, Vol. 129, pp. 453-460, 2008.

61. **KUSUM DEEP**, M. L. Kansal: and K. P. Singh: "An Interactive Method for MultiObjective Reliability Optimization Problems", 3rd International Conference on Reliability and Safety Engineering, organized by IIT Kharagpur, Udaipur, December 17 – 19, 2007, pp. 566 – 571.

62. **KUSUM DEEP** and DIPTI, A New Hybrid Self Organizing Migrating Genetic Algorithm for function optimization, IEEE Congress on Evolutionary Computations, September 25–28,2007, **Singapore,** Proceedings, pp.2796–2803.

63. **KUSUM DEEP**, PRADEEP KUMAR PARHI and KEDAR NATH DAS, Comparative Optimization of Infiltration Parameters, WORLDCOMP, June 25 – 28, 2007, Las Vegas, **USA,** Proceedings, CSREA, pp.102–107.

64. MANOJ THAKUR and **KUSUM DEEP**, Data Assimilation of a Biological Model using Genetic Algorithms, 26th SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, Peterhouse College, **Cambridge, UK**, December 11–13, 2006, Proceedings Springer, pp. 238–242.

65. MILLIE PANT and **KUSUM DEEP**, Building a Better Air Defence System Using Genetic Algorithms, Conference on Knowledge Based Intelligent Systems, Bournemouth International Centre, **UK,** October 9–11, 2006, Springer Proceedings, pp. 951–959.

66. V. H. SARAN, K. RAMJI, V. K. GOEL and **KUSUM DEEP**, Optimum Design of suspension System for Three – wheeled motor vehicle – using Random Search Optimization Technique, 18th IAVSD Symposium, Kanagawa Institute of Technology, **Kanagawa, Japan**, August 2003.

67. **KUSUM DEEP** and MILLIE PANT: "The I-GRST Algorithm for Integer and Mixed Integer Optimization Problems", Anna University, Chennai, December 27 – 30, 2002.

68. **KUSUM DEEP** and MILLIE PANT:"Speed Optimization of Optical Disc Servo System using Genetic Random Search Technique", Department of Mathematics, IIT Bombay, December 7 - 9, 2002.

69. K. RAMJI, **KUSUM DEEP** and V. K. GOEL: "Optimum Design of a Three Wheeled Vehicle Suspension System Subjected to Random Road Excitation", National Conference on Transportation Systems, IIT Delhi, April 24 – 26, 2002, proceedings, pp. 682-686.

70. **KUSUM DEEP** and MILLIE PANT: "Some New Algorithms for Obtaining Global Solution of Non Linear Optimization Problems", Indian Science Congress, Lucknow, Jan 5, 2002.

71. **KUSUM DEEP** and MILLIE PANT: "A New Algorithm for Global Optimization, International Conference on Mathematical Modeling", Department of Mathematics, University of Roorkee, January 29-31, 2001.

72. **KUSUM DEEP** and MILLIE PANT: "Genetic Random Search Technique for solving Large Scale Non Linear Programming Problems", NSMMA Conference, IIT Madras, Dec 22, 2001.

73. **KUSUM DEEP** and S.K.AGARWAL: "Optimal Design of Reinforced Concrete Structures using Global Optimization Techniques", Mathematics and Applications to Engineering and Industry, Department of Mathematics, University of Roorkee, pp.27-32, 1997.

74. **KUSUM DEEP** and D.J.EVANS: "A Parallel Random Search Global Optimization Technique for Transputers", Second Conference of Indian Transputer User Group, Hyderabad, India, December 8-10, Abstract in Proceedings, pp.39-40, 1994.

75. B.SRIDEVI and **KUSUM DEEP**, Application of Global Optimization Technique in Slope Stability Analysis, Sixth International Conference on Landslides, Christchurch, **New Zealand**, February 10-14, 1992, pp. 573-578

76. **KUSUM SHANKER** and C.Mohan: A Random Search Technique for the Global Minima of Constrained Nonlinear Optimization Problems, International Conference on Optimization Techniques and Applications, **Singapore,** p.905-918, 1987

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Convention of the Operations Research Society of India, Jamshedpur, December 1985, Opsearch, Vol. 23, No.1, p.34, (1986) and full paper in the Proceedings.

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1. Dipti Singh, Seema Agrawal and **KUSUM DEEP**: "C-SOMAQI: Self Organizing Migrating Algorithm with Quadratic Interpolation Crossover Operator for Constrained Global Optimization", © Springer International Publishing Switzerland 2016 D. Davendra and I. Zelinka (eds.), Self-Organizing Migrating Algorithm, Studies in Computational Intelligence 626, pp. 147-165, DOI 10.1007/978-3-319-28161-2_7.
2. **KUSUM DEEP** and Dipti Singh: "Optimization of Directional Overcurrent Relay Times Using C-SOMGA", © Springer International Publishing Switzerland 2016 D. Davendra and I. Zelinka (eds.), Self-Organizing Migrating Algorithm, Studies inComputational Intelligence 626,pp.167-186,DOI10.1007/978-3-319-28161-2_8.
3. Dipti Singh and **KUSUM DEEP:** " SOMGA for Large Scale Function Optimization and Its Application", © Springer International Publishing Switzerland 2016 D. Davendra and I. Zelinka (eds.), Self-Organizing Migrating Algorithm, Studies in Computational Intelligence 626, pp. 187-205, DOI 10.1007/978-3-319-28161-2_9
4. **KUSUM DEEP** and Kedar Nath Das: "Hybrid Binary Coded Genetic Algorithm for Constrained Optimization", "Genetic Algorithms Theories and Applications", LAP LAMBERT Academic Publishing, ISBN-13: 978-3848447084, pp. 177-182, March 2012.
5. **KUSUM DEEP** and MADHURI ARYA: " Minimization of Lennard-Jones Potential Using Parallel Particle Swarm Optimization Algorithm", Communications in Computer and Information Science, 1, Volume 94, Contemporary Computing, Part 3, Pages 131-140.
6. PINKEY CHAUHAN, **KUSUM DEEP** and MILLIE PANT: " Power Mutation Embedded Modified PSO for Global Optimization Problems", Lecture Notes in Computer Science, 2010, Volume 6466, Swarm, Evolutionary, and Memetic Computing, Pages 139-146.
7. MANOJ THAKUR and **KUSUM DEEP**: "Data Assimilation of a Biological Model Using Genetic Algorithms", 2007, Applications and Innovations in Intelligent Systems XIV, Part 6, Pages 238-242.
8. **KUSUM DEEP** and J. C. BANSAL: "Performance Analysis of Turning Process via Particle Swarm Optimization", Studies in Computational Intelligence, 2008, Volume 129, Nature Inspired Cooperative Strategies for Optimization (NICSO 2007), Pages 453-460.
9. MILLIE PANT and **KUSUM DEEP**: "Building a Better Air Defence System Using Genetic Algorithms", Lecture Notes in Computer Science, 2006, Volume 4251, Knowledge-Based Intelligent Information and Engineering Systems, Pages 951-959.

REVIEW/ RESEARCH REPORTS **NINE**
1. M. Phil Dissertation entitled "Use of Optimization Techniques in Geophysical Prospecting", University of Roorkee, 1983.
2. Ph. D Thesis entitled "Computational Algorithms for Global Optimization Problems and their Applications with particular reference to Geophysics", University of Roorkee, 1988.
3. Project completion Report entitled "Forecasting of Landslides and Mathematical Models for Global Optimal Factor of Safety and Statistical Analysis of Data on Slopes, Landslides and other mass movements in the Himalayan Region", submitted to Central Building Research Institute, Roorkee, April 1992.
4. Report entitled "state-of-the-art Report on Prognostic Modeling of Landslides", Department of Science and Technology, Govt. of India, 1992.

5. Project Completion Report entitled "A Study of Parallel Heuristic Algorithms for use in Global Optimization", submitted to Commission of European Communities, Brussels, 1994.
6. Departmental Report No. 882, Parallel Algorithm Research Centre, Department of Computer Studies, Loughborough University of Technology, U.K. entitled "A Parallel Random Search Global Optimization Method", March 1994.
7. Departmental Report No. 911, Parallel Algorithm Research Centre, Department of Computer Studies, Loughborough University of Technology, U.K. entitled "The Random Search Global Optimization Method for Parallel Computer", July 1994.
8. Departmental Report No. 917, Parallel Algorithm Research Centre, Department of Computer Studies, Loughborough University of Technology, U.K. entitled "A Parallel Random Search Global Optimization Technique", August 1994.
9. Departmental Report No. 923, Parallel Algorithm Research Centre, Department of Computer Studies, Loughborough University of Technology, U.K. entitled "state-of-the-art on Parallel Nonlinear Global Optimization", March 1994.

THESIS SUPERVISED AND SUBMITTED TO IIT ROORKEE

PhD THESIS GUIDED   13 Awarded,   2 submitted,   4 Ongoing

S.No.	Name of Student	Year of Award	Title of Thesis	Co-Supervisors (if any)
1	Millie Pant	2003	Genetic Algorithms for Global Optimization and their Applications	-
2	Manoj Thakur	2007	New Real Coded Genetic Algorithms for Global Optimization	-
3	Dipti	2007	Hybrid Genetic Algorithms and their Applications	-
4	Kedar Nath Das	2008	Design and Applications of Hybrid Genetic Algorithms for Function Optimization	-
5	Krishan Pratap Singh	2009	Multi-Criteria Decision Making Techniques for Engineering and Management Problems	Prof. M. L. Kansal, IIT Roorkee
6	Jagdish Chand Bansal	2009	Design and Applications of Particle Swarm Optimization	-
7	Shashi	2011	New Real Coded Genetic Algorithms and their Applications to Bio-related Problems	Prof. V. K. Katiyar, IIT Roorkee Dr. C. K. Katiyar Dabur (I) Pvt. Ltd.
8	Hadush	2012	Design and Applications of Genetic Algorithms for the Traveling Salesman Problems	-
9	Pinkey Chauhan	2013	New PSO Variants and their Applications in Process Industry	Dr. Millie Pant, IIT Roorkee
10	Madhuri	2013	Particle Swarm Optimization: Improvements, Applications, and Parallelization	-
11	Anupam Yadav	2013	Improvised Particle Swarm Optimization Algorithms and their Applications to Determine Hypocentral Parameters	Dr. Sushil Kumar Rohella, Wadia Institute of Himalayan Geology Dehradun
12	Garima Singh	2016	New PSO Based Membrane Algorithms for Chess, Sudoku and other Applications	-
13	Amarjeet Singh	2016	Novel Gravitational Search Algorithms and their Applications	-
14	Amreek Singh	Submitted	An Improvised ABC Algorithm and its GPU-aided Application for Avalanche Forecasting	-
15	Kavita Gupta	On-going	Genetic Algorithms in Fashion Technology	-

16	Vanita Verma	submitted	Design and Applications of Biogeography Based Optimization	-
17	Assif Assad	On-going	Nature Inspired Optimization Techniques	-
18	Shail Kumar Dinkar	On-going	Nature Inspired Optimization Techniques	-
19	Shubham Gupta	On-going	Nature Inspired Optimization Techniques	-

M.TECH THESIS GUIDED
1. Roy P. Pardede: "Nonlinear Programming Based Design of Looped Water Distribution Network", IIT Roorkee, jointly with Prof. M. L. Kansal, July 2005.

M.PHIL THESIS GUIDED   SIX

S.No.	Name of Student	Year of Completion	Title of Thesis	Co-Supervisors
1	Neeta Sharma	1990	An Interactive Package in Pascal for Inversion of Gravity Data in Geophysical Prospecting	–
2	Seema	1993	A Controlled Random Search Technique for Solving Global Optimization Problems on PC in C Language	–
3	Sunil Chandra	1997	Optimal Design of some Real Life Problems	–
4	Pankaj Goel	1997	Optimal Design of Dwelling – Layout Systems	–
5	Arjun Singh	1999	To Design an Optimization Technique using Neural Networks	–
6	Sarika Gupta	1999	Computational Parallel Global Optimal Techniques	–

MCA THESIS SUPERVISED   FIFTY TWO

S.No.	Name of Student	Year of Completion	Title of Thesis	Co-Supervisors
1	Kumar Pal Suresh Singh	Dec. 2001	Parallel Global Optimization Techniques on PARAM 10000	–
2	Suresh Kr. Singh	May 2002	Heterogeneous Network Accounting Package (NT)	–
3	Kumar Pal	May 2002	Explosion and Fire Simulation	–
4	Shiv Kr. Verma and Anil Kumar	December 2002	Development of software for Representing Track Geometry variations by Power Spectral Density	–

5	Anurag Singh and Vikas Gupta	December 2002	A scheme for Realistic Real – Time Rendering of Animated Virtual Worlds using Parallel Processing Techniques	–
6	Vikas KVerma	May 2003	Deposit Management System	–
7	Kamal Singh Nigam	May 2003	Visuals Claims	–
8	Sachin Agarwal	May 2003	Workflow Management System for Mahindra and Mahindra	–
9	Anurag Singh	May 2003	Design, Implementation, Testing, Procedural Texture Library	–
10	Dheeraj Kr. V.K.Bhardwaj, Amit K Alok K	December 2003	Implementation of Router on Linux	–
11	Vineet Kumar Bharadwaj	May 2004	Development of Web based Query Engine for 7th All India School Education Survey conducted by NCERT and NIC	–
12	Savita	May 2004	Data Recovery of Deleted AutoCad drawings from Hard Disk	–
13	Amit Kumar	May 2004	Web Designing on E – governance activities	–
14	Alok Kumar	May 2004	Telephone Line Testing in EWSD Exchange	–
15	Pawandeep, Satender Pal, Yogesh	December 2004	Conversion of XML Data File to PDF & WML Format	–
16	Pawandeep	May 2005	Extreme Regression Tool – Implemented as a Web Service	–
17	Sunil Kumar	May 2005	Order Management System	Umesh Ghildiyal, Wipro, Gurgaon
18	Satinder Pal	May 2005	Interviewer Database	K. Sharath Chandra, Amsoft Systems Pvt. Ltd., Gurgaon.

19	Beshiela Najiar	May 2006	Development of Online form for Meghalaya (Schedule Tribe Certificate	Timothy Dkhar, State Informatics Officer, National Informatics Centre, Meghalaya State Unit, Shilong
20	Abhinav Pandir	May 2006	Linux over Solos	Varinder Paul Singh, Conexant System, NOIDA
21	Kanchan Joshi	May 2006	VASR & Anti Virus Automation	Gaganeet Singh, Senior Software Engineer, Solidcore, NOIDA
22	Abha Awasthi, Purnima Agarwal, Gurleen Kaur, Ritu Sodhi	December 2007	Parallel Implementation of Sorting Algorithms on a Linux Cluster	–
23	Anuj Shara, Kailash Chand, S. S. Gussain	December 2007	Extended Indexed File Systems (EXIFS)	–
24	Gurleen Kaur	May 2008	Development of an Integrated Backup and Restart Procedure for M5 solution	Vishal Sharma, Genband Tech. Noida
25	Purnima Agarwal	May 2008	Integrating Components into Management Platform in a Model Driven Approach	S. Giridharan, SAP Labs India, Bangalore
26	Ritu Sodhi	May 2008	Creating Selenium Tests for a Project Management Application	Indraneel Chowdhary, Global Logic, Noida
27	Aashish K, Seema Ahluwalia, SeevakumarC	Nov 2008	Extension of Resource Reservation Protocol to provide QoSS	–
28	Nishant Saxena	May 2009	Automation of Build, Integrated Testing, Regression and Static Code Analysis of Decomposer and DecABI	Netra Deshpanda, Symantec Co-op, Pune
29	Akhil Agrawal	May 2009	Report Generation Tool for Symantec Security Information Manager	Shymal Pandya, Symantec Co-op, Pune

30	Paras Malik Robin Suri, Tejas Patgonker	Dec 2009	Bitmap Image Processor	–
31	Paras Malik	May 2010	Enhancing current frameworks and developing new frameworks for automatic testing and client side debugging	Shyam Raikar, NVIDIA Graphics Pvt. Ltd, Pune
32	Robin Suri	May 2010	Enhancing Network Integrity and Object Integrity modules in Enterprise Security Manager	Jogesh Sharma, Symantec Corporation, Pune
33	Manish Kumar Gaurav, Pranav Kumar Singh, Ishan Tajram Varade	Nov 2010	Stock Market Forecasting System	-
34	Pranav Singh	May 2011	Kernel logging Infrastructure (Vxlogger) for Veritas volume manager (VxVM)	Prasad Limaye, Symantec, Pune
35	Gaurav Kumar Singh	May 2012	Enhancement of SPE for scanning Powered Off VMs using VDDK 1.1 and Development of SPE – Traffic Monitor	Sushrut Mair, Principal Software Engineer Symantec Corporation, Pune
36	Niraj Kumar Pandey	May 2012	UI Design and Development of MaaS360 Web Services	Ameya Kulkarni, Lead Software Engineer FiberlinkIndia Pvt. Ltd., Bangalore
37	Nitin Gupta Bhanu Damir Niranjan Bara	Nov 2012	Parallel Nature Inspired Optimization Techniques using CUDA	-
38	Nitin Gupta	May 2013	Noise Reduction using CUDA	N. Avadanam, NVIDIA Graphice Pvt. Ltd, Bangalore
39	Bhanu Damir	May 2013	Implementation of Parallel Optimization Techniques using Nvidia CUDA for the eN10 parallelization	Amreek Singh, SASE, DRDO Chandigarh
40	AbhishekKumar Adarsha Kumar Rahul Sachan	Nov 2013	Nature Inspired Optimization Techniques Using Parallel Computing with CUDA	-

41	Rahul Sachan	May 2014	Adiquity user interface development	Y. Prabhakar Reddy AdIQuity Technologies Pvt. Ltd
42	Adarsha Kumar	May 2014	Improving Installer Performance & Experience	Bishnu Chaturvedi , Sr Software Engineer, Data Loss Prevention Symantec Corporation
43	Abhishek Kumar	May 2014	Enhancement to Tools and Tests for CUDA Performance Analysis	Mr. Sanjiv Satoor, Sr. Manager compute, Nvidia Graphics Pvt. Ltd, Pune
44	Heena Rana	May 2015	Integrating Phonegap into Jiwan Books mobile applications	Rajeev GaurE-definers Technology, New Delhi
45	Puneet Kumar	May 2015	Human Resource Management System for Egnaro	Narendra Reddy, Egnaro, Hyderabad
46	Sanjoy Kumar Sardar	May 2015	Employee Portal with Layer Architectures and Security maintenance	Sumeet Malik, Nagarro Software Pvl Ltd., Gurgaon
47	Amit Kumar Saurabh Kumar Niraj Kumar Choudhary	Nov 2015	m-seeker: using voice recognition technology	-
48	Ayush Jaiswal Sandeep Kumar Vishwanath Pratap Singh	Nov 2015	Web based Book Catalogue System	-
49	Sandeep Kumar	May 2016	Our Health An iOS Application	Amit Sharma Mindfire solutions, Noida
50	Ayush Jaisal	May 2016	Integrating Line of Business Application with Microsoft Office APP's	Jatant Pathak, Office Integrators, Pvt. Ltd.,Pune

S.No.	Name of Student	Year	Title of Thesis	
51	Sunil Baitha	May 2016	Design of a New Approach of Package Transportation System	Chinmoy Panda, Mindfire Solutions, Bhubaneswar
52	Vishwanath Pratap Singh	May 2016	Server side data download utility for clients	Sridevi B., Amazon, Hyderabad

M.SC THESIS SUPERVISED   **FORTY FIVE**

S.No.	Name of Student	Year	Title of Thesis
1	Sonika Malhotra	1997	On the Generation of Pseudo Random Numbers on Personal Computers in FORTRAN
2	Vikas Gupta	2000	–
3	Anuj	2000	–
4	Arvind Kumar Gupta	2000	Graphical Solution of Real Life Optimization Problems using C++
5	Jitender Kumar	Dec. 2000	OOP Approach to Random Search Global Optimization technique and its Application to Air Defence Problems
6	Amit Kumar Tyagi	Dec. 2000	Simplex Method for Large Scale Linear Programming Problems and its Applications
7	Jitender Kumar	July 2001	Neural Network Approach for Optimization
8	Amit Kumar Tyagi	July 2001	Use of Genetic Algorithm in Air Defence Area
9	Arun Kumar	Dec. 2001	Analytical Hierarchy Process
10	Arun Kumar	July 2002	Aircraft Landings and Takeoffs
11	Preet	July 2002	Genetic Algorithm for Real Life Optimization Problems
12	Megha	Dec. 2003	Membership Functions in Fuzzy Set Theory
13	Megha	May 2004	Genetic Algorithm Approach for Global Optimization
14	Ashish Sharma	Dec. 2004	Some Methods for Parallel Computing
15	Pankaj K Gupta	Dec. 2004	A Computer Programme for Simplex Method for solving LPP
16	Neeshu Jain	Dec. 2004	A Computer Programme for Hooks and Jeeves for solving NLPP
17	Ashish Sharma	May 2005	Some Parallel Programs on PARAM 10000 using MPI
18	Pankaj Kumar Gupta	May 2005	Solution of some Real Life Nonlinear Optimization Problems using Fletcher and Reeves Method
19	Neeshu Jain	May 2005	Solution of some Real Life Nonlinear Optimization Problems using Steepest Descent Method
20	Megha Sangtani	Dec. 2005	Study of Kaprekar's Theory of Numbers

21	Indeep Kaur	Dec. 2005	Solution of Timetabling Problem using Genetic Algorithms
22	Megha Sangtani	May 2006	Some Experiments with a Steady State Global Optimization Technique
23	Indeep Kaur	May 2006	A Study of Particle Swarm Optimization and Its Application
24	Preeti Abhichandani	Nov. 2006	Teaching Aid in 3D Geometry
25	Ajanta Trivedi	Nov. 2006	The Sudoku Puzzle
26	Ashmeen Kaur Nagpal	Nov. 2006	Optimization in Radiation Treatment Planning
27	Ajanta Trivedi	May 2007	Optmal Water-waste Management
28	Ashmeen Kaur Nagpal	May 2007	Tumor Treatment – an Optimization Approach
29	Priya Kohli	Nov. 2007	A Study of Optimization Models in Rapid Transit Systems
30	Mukush Paul	Nov. 2007	Determining the Shortest Routes in Northern Railways
31	T. Rama Rao	Nov. 2007	Optimization of Green Building Design using Genetic Algorithms
32	T. Rama Rao	May 2008	Reliability Optimization
33	Mukesh Paul	May 2008	Air Defence Missile-Target Allocation Models for a Navel Task Group
34	Sonam Singh	Dec 2008	Optimization of Airport Noise
35	Pragya	Dec 2008	An optimization Approach to Drug Designing
36	Sonam Singh	May 2009	Solution of Traveling Salesman Problem using Genetic Algorithms
37	Pragya	May 2009	Optimization of Launch Vehicles
38	Hari Shankar	May 2010	Optimization of Thomson Problem using PSO
39	Som Pal	Dec 2010	Solution of Degenerate LPP using PSO
40	Rakesh Meena	May 2012	Application of Response Surface Methodology
41	Rakhi Bihari	Dec 2012	Optimal Design of a Solar Air Heater using Firefly Algorithm
42	Bhavya Tripathi	Dec 2012	Artificial Bee Colony Algorithm
43	SK Shahidur Rahman	May 2014	Solving Fractional Programming Problems using PSO
44	Saurabh Arora	May 2015	Portfolio Optimization using Nature Inspired Algorithms
45	Ashutosh Uopadhatat	May 2015	Solution of Transportation Algorithm using Genetic Algorithms

IDD THESIS SUPERVISED   SIX

1	Sunny Malhotra	Improving Earthwork Operations for Road Design	Spring 2011
2	Sulabh Mali	Optimization of Hazardous Waste Blending Problem	Spring 2012
3	Sunny Malhotra		Spring 2013
4	Razak Gupta		Spring 2013

5	Rajat	Cutting Stock using Genetic Algorithms	Spring 2015
6	Nidhi Dabas	Grey Wolf Optimizaer Algorithm for continuous Optimization Problems	Spring 2016

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