

Kusum Deep, Ph.D.

✉ kusum.deep@ma.iitr.ac.in, kusumdeep@gmail.com

🌐 Website -> <http://goo.gl/DPft63/>

🌐 Scopus ID -> <https://bit.ly/2WwsVt7>

🌐 ORCID ID -> <https://bit.ly/30JXR0q>

🌐 Google Scholar -> <https://bit.ly/32UAB2S>

🌐 Researcher ID -> C-5028-2011



Education

- 1994 📖 Post Doctorate, Loughborough University of Technology, UK
- 1988 📖 Ph.D, University of Roorkee in Mathematics
- 1984 📖 M.Phil, University of Roorkee, University Gold Medal in Mathematics
- 1983 📖 M.Sc. Honours School, Punjab University, Chandigarh in Mathematics
- 1979 📖 B.Sc. Honours School, Punjab University, Chandigarh, UGC Scholarship in Mathematics

Employment

- 2012 – till now 📖 Professor, Department of Mathematics, IIT Roorkee.
- 5.5.2004 – 22.10.2012 📖 Associate Professor, Department of Mathematics, IIT Roorkee.
- 25.6.1996 – 4.5.2004 📖 Assistant Professor, Department of Mathematics, IIT Roorkee.
- 20.12.1989 – 24.6.1996 📖 Scientist C, CSIR-Central Building Research Institute, Roorkee.
- 15.6.1988 – 19.12.1989 📖 Fellow Scientist, CSIR-Central Building Research Institute, Roorkee.

Honours, Awards and Recognition

- 2019 📖 Best Paper Award, Inter. Conf. on Operations Research and Decision Sciences, IIM Visakhapatnam
- 📖 Visiting Professor, University of Technology, Sydney, Australia
- 📖 Visiting Professor, University of Wollongong, Wollongong, Australia
- 📖 Visiting Professor, Liverpool Hope University, UK
- 2018 📖 AIAP Excellence Award, in Appreciation and Recognition of Continued Dedication in the Area of Reliability Modeling
- 2019 📖 Best Paper Award, Inter. Conf., Harmony Search Algorithms, Korea University
- 2014 📖 Founding President, Soft Computing Research Society
- 2010 📖 Nominated, Senior Life Member, Computer Society of India
- 2008 📖 Nominated, Senior Life Member, Operations Research Society of India
- 2007 📖 Nominated, EXPERT, Dept. of Science and Technology
- 📖 Special facilitation in memory of Prof. M.C.Puri, Golden Jubilee Celebrations of ORSI
- 2005 📖 Best Technical Paper Award, Railway Bulletin of Indian Railways
- 2004-05 📖 Star Performer, IIT Roorkee Faculty
- 2003-04 📖 Star Performer, IIT Roorkee Faculty
- 2002-03 📖 Star Performer, IIT Roorkee Faculty
- 2001-02 📖 Star Performer, IIT Roorkee Faculty
- 2005-07 📖 Sponsored Research Project under Thrust Area, MHRD
- 2002-05 📖 Career Research Award, UGC

Honours, Awards and Recognition (continued)

- 1993-94 ■ Post Doctoral Research Bursary, Commission of European Communities, Brussels at Department of Computer Studies, Loughborough University of Technology, Loughborough, U.K
- 1991 ■ Khosla Research Award, University of Roorkee
- 1984 ■ Qualified NET, UGC
- University Gold Medal, M.Phil
- 1975-78 ■ UGC National Merit Scholarship, B. Sc. (Hons.)
- 1974 ■ First in Class, AIHS

Sponsored Research Projects

- 1992-95 ■ Prognostic Modeling of Landslides, DST, Rs. 4,34,400/- with Dr. G. S. Mehrotra
- 1993-94 ■ Use of Parallel Heuristic Algorithms for use in Global Optimization, Commission of European Communities Brussels, ECU \$ 28,836
- 1996-97 ■ Optimization of some Nonconvex Nonlinear Programming Test Problems using RST2 Algorithm, UGC, Rs. 10,000/-
- 1999-00 ■ Neural Network Based Algorithms for Global Optimization, UGC, Rs. 5,000/
- 2002-05 ■ Genetic Algorithms in Defence, UGC, Rs. 12 lakhs
- 2005-07 ■ Migrating Host Programs to Grids by Adaptive Compilation, MHRD, Rs. 8.5 lakhs
- 2008-11 ■ Study for assessment, estimation and prevention of non-point source ground water contamination in Fuzzy environment using Genetic Algorithms and applying High Performance Computing, DST, Rs. 13.97 lakhs with Dr. Millie Pant
- 2013-14 ■ Mobility of Human Resource Development in Mathematics, DST, Rs. 1.7 Lakhs
- 2014-16 ■ Hybrid Nature Inspired Algorithms for Optimization Problems in Financial Mathematics, DST-RFBR, Rs. 18 lakhs with Dr. Millie Pant

Consultancy Projects

- 2009-12 ■ Open Source tools, simulation tools, software tools under Mission on Education through ICT Optimization Tool Box, MHRD under Mission on Education, through ICT, Rs. 2.5 crores with Prof. S. C. Saxena, Prof. J. D. Sharma, Dr. Millie Pant
- 2009-10 ■ Operations Research, NPTEL Phase II Courses Development (Video package), Rs. 2 lakhs
- 2011-13 ■ Optimization of Parametric Weights of Nearest Neighbour Model for Avalanche Forecasting, SASE, DRDO, Chandigarh, Rs. 15 Lakhs
- 2019 ■ Operations Research, MOOC, NPTEL, Rs. 3 lakhs

PhD Students

- [Millie Pant](#) (2003) Genetic Algorithms for Global Optimization and their Applications
- [Manoj Thakur](#) (2007) New Real Coded Genetic Algorithms for Global Optimization
- [Dipti Singh](#) (2007) Hybrid Genetic Algorithms and their Applications
- [Kedar Nath Das](#) (2008) Design and Applications of Hybrid Genetic Algorithms for Function Optimization
- [Krishan Pratap Singh](#) (2009) Multi-Criteria Decision Making Techniques for Engineering and Management Problems (Co-Supervisor: Prof. M. L. Kansal, IIT Roorkee)

PhD Students (continued)

- **Jagdish Chand Bansal**(2009) Design and Applications of Particle Swarm Optimization
- **Shashi Barak** (2011) New Real Coded Genetic Algorithms and their Applications to Bio-related Problems (Co-Supervisors: Prof. V. K. Katiyar, IIT Roorkee; Dr. C. K. Katiyar Dabur (I) Pvt.Ltd.)
- **Mebrahtu Hadush** (2012) Design and Applications of Genetic Algorithms for the Traveling Salesman Problems
- **Pinkey Chauhan** (2013) New PSO Variants and their Applications in Process Industry (Co-Supervisor: Dr. Millie Pant, IIT Roorkee)
- **Madhuri** (2013) Particle Swarm Optimization: Improvements, Applications, and Parallelization
- **Anupam Yadav** (2013) Improvised Particle Swarm Optimization Algorithms and their Applications to Determine Hypocentral Parameters (Co-Supervisor: Dr. Sushil Kumar Rohella, Wadia Institute of Himalayan Geology Dehradun)
- **Garima Singh** (2016) New PSO Based Membrane Algorithms for Chess, Sudoku and other Applications
- **Amarjeet Singh** (2016) Novel Gravitational Search Algorithms and their Applications
- **Amreek Singh** (2017) An Improvised ABC Algorithm and its GPU-aided Application for Avalanche Forecasting
- **Vanita Garg** (2017) Design and Applications of Biogeography Based Optimization
- **Assif Assad** (2017) Design and Applications of New Harmony Search Algorithms
- **Kavita Gupta** (2018) Design and Applications of Spider Monkey Optimization
- **Shail Kumar Dinkar** (2019) Design and Applications Of Ant Lion Optimizer
- **Shubham Gupta** (2019) Variants of Grey Wolf Optimizer and Sine Cosine Algorithm for global optimization and their applications
- **Prince Solanki** (On going) Applications of Nature Inspired Optimization Techniques in Renewable Energy (Co-Supervisor: J.C. Bansal, South Asian University, New Delhi)
- **Ashish Dixit** (On going) Applications of Metaheuristics in Finance (Co-Supervisor: Dr. Seyedali Mirjalili, Torrens University, Australia)
- **Karuna Panwar** (On going) Coloured Transportation
- **Preeti** (On going) Nature Inspired Optimization Techniques
- **Manish Kumar Singh** (On going) Nature Inspired Optimization Techniques
- **Kanchan Rajwar** (On going) Nature Inspired Optimization Techniques
- **Yogesh Kumar** (On going) Nature Inspired Optimization Techniques

Research Publications

In Referred International Journals:

1. Shubham Gupta, **Kusum Deep** and Seyedali Mirjalili: “An efficient equilibrium optimizer with mutation strategy for numerical optimization”, Applied Soft Computing, Volume 96, November 2020, 106542, Elsevier, (IF=5.472), [Q1 Full Paper](#)
2. Shubham Gupta, **Kusum Deep** and Andries P. Engelbrecht: “A memory guided sine cosine algorithm for global optimization”, Engineering Applications of Artificial Intelligence, Elsevier, Volume 93, August 2020, 103718, (IF=4.201), [Q1 Full Paper](#)
3. Shubham Gupta and **Kusum Deep**: “A memory-based grey wolf optimizer for global optimization tasks”, Applied Soft Computing, Elsevier, Volume 93, August 2020, 106367, (IF=5.472), [Q1 Full Paper](#)
4. Shubham Gupta, **Kusum Deep**, H. Moayedi, Loke Kok Foong and Assif Assad: “Sine cosine grey wolf optimizer to solve engineering design problems”, Engineering with Computers, Springer, February 2020, (IF=3.551), [Q1 Full Paper](#)

5. Shubham Gupta and **Kusum Deep**, Ali Asghar Heidari, Hossein Moayedi and Mingjing Wang: "Opposition-based Learning Harris Hawks Optimization with Advanced Transition Rules: Principles and Analysis", Expert System with Applications, Elsevier, May 2020, (IF=5.452), [Q1 Full Paper](#)
6. Shubham Gupta, **Kusum Deep**, S. Mirjalili and J.H. Kim: "A Modified Sine Cosine Algorithm with Novel Transition Parameter and Mutation Operator for Global Optimization" Expert Systems with Applications, Elsevier, Vol. 154, Article 113395, 2020. (IF=5.452), [Q1 Full Paper](#)
7. Shubham Gupta, **Kusum Deep** and Seyedali Mirjalili: "Accelerated Grey Wolf Optimizer for continuous Optimization Problems", International Journal of Swarm Intelligence, Vol 5. No. 1, pp.22-50, 2020. [Full Paper](#)
8. Shubham Gupta and **Kusum Deep**: "Hybrid sine cosine artificial bee colony algorithm for global optimization and image segmentation.", Neural Computing and Applications, 32, 9521-9543, 2020, Springer, (IF=4.774), [Q1 Full Paper](#)
9. Shubham Gupta and **Kusum Deep**: "H novel hybrid sine cosine algorithm for global optimization and its application to train multilayer perceptrons.", Applied Intelligence, 50, 993-1026, 2020, Springer, (IF=3.325), [Q2 Full Paper](#)
10. Shubham Gupta, **Kusum Deep**, Ali Asgar Heidari, Hossein Moayedi and Hailing Chen: "Harmonized Salp Chain-built Optimization", Engineering with Computers, Springer, 2019, (IF=3.551), [Q1 Full Paper](#)
11. Shubham Gupta and **Kusum Deep**: "Enhanced leadership-inspired grey wolf optimizer for global optimization problems". Engineering with Computers, Springer, 2019,(IF=3.551) [Q1 Full Paper](#)
12. Shubham Gupta and **Kusum Deep**: "A novel Random Walk Grey Wolf Optimizer", Swarm and Evolutionary Computation, Vol.44, 101-112, 2019, Elsevier, (IF=6.330), [Q1 Full Paper](#)
13. Shubham Gupta and **Kusum Deep**: "A hybrid self-adaptive sine cosine algorithm with opposition based learning", Expert Systems with Applications, Elsevier, 119, 210-230, 2019, (IF=4.292), [Q1 Full Paper](#)
14. Shubham Gupta and **Kusum Deep**: "Improved sine cosine algorithm with crossover scheme for global optimization", Knowledge-Based Systems, Elsevier, 165, 374-406, 2019, (IF=5.101), [Q1 Full Paper](#)
15. Shubham Gupta and **Kusum Deep**: "An Efficient Grey Wolf Optimizer with Opposition-Based Learning and Chaotic Local Search for Integer and Mixed Integer Optimization Problems", Arabian Journal for Science and Engineering, Springer, 1-20, 2019,(IF=1.518), [Q2 Full Paper](#)
16. Shail Kumar Dinkar and **Kusum Deep**: "Opposition-based antlion optimizer using Cauchy distribution and its application to data clustering problem", Neural Computing and Applications, Springer, pp.1-29,2019,(IF=4.664)[Q1 Full Paper](#)
17. Amreek Singh and **Kusum Deep**: (2019) "Artificial Bee Colony algorithm with improved search mechanism", Soft Computing, Springer, pp.1-24, 2018,(IF=2.784),[Q2 Full Paper](#)
18. Dinkar, S. K., and **Kusum Deep**: "Accelerated opposition based Antlion Optimizer with application to Order Reduction of Linear Time Invariant Systems" Arabian Journal for Science and Engineering Springer. Vol. 44(3), pp. 2213- 2241, 2019, (IF=1.518).[Q2 Full Paper](#)
19. Shubham Gupta and **Kusum Deep**: "An opposition-based chaotic Grey Wolf Optimizer for global optimization tasks", Journal of Experimental & Theoretical Artificial Intelligence, Taylor & Francis, Vol. 31(5), 751-779. (IF=2.111)[Q2 Full Paper](#)
20. Soniya Lalwani, H. Sharma, S.C. Satapathy, **Kusum Deep** and J.C. Bansal: "A Survey on Parallel Particle Swarm Optimization Algorithms", Arabian Journal of Science and Engineering, (IF=1.518)[Q2 Full Paper](#)
21. Shail Dinkar and **Kusum Deep** (2018). "An efficient opposition based LévyFlight Antlion Optimizer for optimization problems", Journal of Computational Science, Elsevier, Vol. 29, pp. 119-141, 2018.(IF=2.502)[Q1 Full Paper](#)
22. Shail Dinkar and **Kusum Deep** (2018). "Process optimization of biodiesel production using antlion optimizer", Journal of information and Optimization Sciences (Taylor & Francis), 2018.1491821.ESCI, [Full Paper](#)
23. Shubham Gupta and **Kusum Deep**: "Cauchy Grey Wolf Optimiser for continuous optimization problems", Journal of Experimental & Theoretical Artificial Intelligence, Vol.30(6), 1051-1075, 2018, (Taylor & Francis).(IF=2.111)[Q2 Full Paper](#)
24. Assif Assad and **Kusum Deep**: "A Hybrid Harmony Search and Simulated Annealing Algorithm for Continuous Optimization", Information Sciences, Elsevier, Vol. 450, pp. 246-266, 2018. (IF=5.524)[Q1 Full Paper](#)
25. Shubham Gupta and **Kusum Deep**: "Random Walk Grey Wolf Optimizer for Constrained Engineering Optimization Problems", Computational Intelligence, Wiley,Vol. 34(4), pp.1025-1045, 2018. (IF=0.776).[Q3 Full Paper](#)

26. Assif Assad and **Kusum Deep**: “Harmony search based memetic algorithms for solving sudoku”, International Journal of System Assurance Engineering and Management, Springer, Vol. 9(4), pp. 741–754, 2018. [Full Paper](#)
27. Shail Dinkar and **Kusum Deep**: “Opposition Based Laplacian Ant Lion Optimizer”, Journal of Computational Science, Elsevier, Vol. 23, pp.71-90, 2017. (IF=2.502)[Q1 Full Paper](#)
28. Assif Assad and **Kusum Deep**: “A Heuristic Based Harmony Search Algorithm for Maximum Clique Problem”, Opsearch, Vol. 55, No. 2, pp. 411-433, 2018. [Full Paper](#)
29. Amarjeet Singh and **Kusum Deep**: “Improved Variants of Gravitational Search Algorithm Based on “best-so-far” Updating Mechanism”, National Academy Science Letters, 40(13), pp. 365–372, 2017. (IF=0.331)[Q2 Full Paper](#)
30. Amarjeet Singh and **Kusum Deep**: “Reconstruction of 3D Curves and Surfaces using New Variants of Gravitational Search Algorithm”, accepted, Journal of Information and Optimization Sciences, 2017. [Full Paper](#)
31. Amreek Singh, **Kusum Deep** and Pallavi Grover: “A Novel Approach to Accelerate Calibration Process of K-Nearest Neighbours Classifier Using GPU”, Journal of Parallel and Distributed Computing, Elsevier, Vol. 10, pp.114-129, 2017. (IF=1.819).[Q2 Full Paper](#)
32. Amarjeet Singh and **Kusum Deep**: “Hybridizing Gravitational Search Algorithms with Real Coded Genetic Algorithms for Structural Engineering Design Problem”, Opsearch, Springer, 54(3), 505-536, 2017. [Full Paper](#)
33. Soniya Lalwani, Rajesh Kumar and **Kusum Deep**: “Multi-objective two-level swarm intelligence approach for multiple RNA sequence-structure alignment”, Swarm and Evolutionary Computation, Elsevier, Vol. 34, pp. 130-144, 2017, (IF=6.330)[Q1 Full Paper](#)
34. Garima Singh and **Kusum Deep**: “Effectiveness of new Multiple-PSO based Membrane Optimization Algorithms on CEC 2014 Benchmarks and Iris Classification”, Natural Computing, Springer Vol. 16, No. 3, pp. 473-496, 2017. (IF=1.330)[Q3 Full Paper](#)
35. Amarjeet Singh and **Kusum Deep**: “Novel Hybridized variants of Gravitational Search Algorithm for Constraint Optimization”, International Journal of Swarm Intelligence, Vol. 3, Issue 1, pp. 1-22, Jan 2017
36. Kavita Gupta, **Kusum Deep** and J. C. Bansal: “Spider monkey optimization algorithm for constrained optimization problems”, Soft Computing, Springer, Vol. 21, Issue 23, pp. 6933–6962, Dec. 2017, (IF=2.784)[Q2 Full Paper](#)
37. Vanita Garg and **Kusum Deep**: “Constrained Laplacian Biogeography-Based Optimization Algorithm”, International Journal of System Assurance Engineering and Management, November 2017, Volume 8, Supplement 2, pp 867–885. [Full Paper](#)
38. Assif Assad and **Kusum Deep**: “A Two Phase Harmony Search Algorithm for Continuous Optimization. Computational Intelligence. Wiley. Vol. 33(4), pp. 1038- 1075, 2016.(IF=0.776)[Q3 Full Paper](#)
39. Anupam Yadav, **Kusum Deep**, Joong Hoon Kim and Atulya K Nagar: “Gravitational Swarm Optimizer for Global Optimization”, Swarm and Evolutionary Computation, Elsevier, Vol. 31, pp.64-89, 2016. (IF=6.330).[Q1 Full Paper](#)
40. 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. [Full Paper](#)
41. Garima Singh and **Kusum Deep**: “A New Membrane Algorithm using the rules of Particle Swarm Optimization incorporated within the framework of Cell-like Psystems to solve Sudoku”, Applied Soft Computing, 45, 27-39, 2016, Elsevier, (IF=4.873),[Q1 Full Paper](#)
42. Vanita Garg and **Kusum Deep**: “Performance of Laplacian BiogeographyBased Optimization Algorithm on CEC 2014 continuous optimization benchmarks and Camera Calibration Problem”, Swarm and Evolutionary Computation, Vol. 27, pp. 132-144, 2016. (IF=6.330),[Q1 Full Paper](#)
43. KedarNath 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. [Full Paper](#)
44. 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
45. 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, Vol. 2, Issue 1, pp.87-96, Jan 2016.

46. 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. [Full Paper](#)
47. 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. [Full Paper](#)
48. Kavita Gupta, **Kusum Deep** and J. C. Bansal: "Improving the local search ability of Spider Monkey Optimization algorithm using Quadratic Approximation for unconstrained optimization", *Computational Intelligence*, 2015, 33(2), pp.210-240, (IF=0.776)[Q3 Full Paper](#)
49. 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. [Full Paper](#)
50. Amreek Singh, Bhanu Damir, **Kusum Deep** and Ashwagosh Ganju: "Calibration of Nearest Neighbours Model for Avalanche Forecasting", *Cold Regions Science and Technology*, Vol. 109, pp. 33-42, January 2015, (IF=2.767).[Q1 Full Paper](#)
51. 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. (IF=3.092)[Q1 Full Paper](#)
52. Kusum Deep, Hadush Mebrahtu and Atulya Kumar Nagar: "Novel GA for Metropolitan Stations of Indian Railways when modeled as a TSP", *International Journal of System Assurance Engineering and Management*, Springer, 2014. [Full Paper](#)
53. Anupam Yadav and **Kusum Deep**: "A shrinking hypersphere PSO for engineering optimisation problems", *Journal of Experimental & Theoretical Artificial Intelligence*, Taylor & Francis, online July 2014, Vol. 28, pp.1-33, 2016, (IF=2.111).[Q2 Full Paper](#)
54. Anupam Yadav and **Kusum Deep**: "An Efficient Co-Swarm Particle Swarm Optimization for Non-linear Constrained Optimization", *Journal of Computational Sciences*, Elsevier, Vol. 5, Issue 2, pp. 258-268, March 2014. (IF=2.502).[Q1 Full Paper](#)
55. J. C. Bansal, Harish Sharma, K. V. Arya, **Kusum Deep** and Millie Pant: "Self Adaptive Artificial Bee Colony", *Optimization: A Journal of Mathematical Programming and Operations Research*, Taylor and Francis, Vol. 63, pp. 1513-1532, 2014, (IF=0.707).[Q1 Full Paper](#)
56. Madhuri and **Kusum Deep**, "Optimization of Extraction Process of Bioactive Compounds from Gardenia, using PSO", *International Journal of Artificial Intelligence and Soft Computing*, Inderscience, Vol. 4, No. 1, pp. 29-40, 2014. [Full Paper](#)
57. Krishna Pratap Singh, M. L. Kansal, **Kusum Deep**: "GA-NR for Optimal Design of Water Distribution Networks", *International Journal of Operational Research*, Inderscience, Vol. 20, No. 3, pp. 241-261, 2014. [Full Paper](#)
58. Krishna Singh, **Kusum Deep** and M. L. Kansal: "Fuzzy Based Interactive Method for Solution of Bi and Multi-level Programming Problems", *International Journal of Information and Decision Sciences*, Inderscience, Vol. 6, No. 2, pp. 166-181, 2014. [Full Paper](#)
59. **Kusum Deep**, Pinkey Chauhan and Millie Pant: "Parameter Optimization of Multi-pass Turning using Chaotic PSO", *International Journal of Machine Learning and Cybernetics*, Springer, Vol. 6(2), 319-337, 2015,[Q1 Full Paper](#)
60. **Kusum Deep**, Madhuri, Manoj Thakur and Balasubramanian Raman, "Stereo Camera Calibration Using Particle Swarm Optimization", *Applied Artificial Intelligence*, Taylor & Francis, Vol. 27, Issue 7, pp. 618-634, 2013. (IF=0.988)[Q3 Full Paper](#)
61. Anupam Yadav and **Kusum Deep** "Shrinking Hyperspheres Trajectories in Particle Swarm Optimization", *Applied Mathematics and Computations*, Elsevier, Vol. 220, pp. 246-267, 2013, (IF=3.092)[Q1 Full Paper](#)
62. A. Yadav and **Kusum Deep**: "Constrained Optimization using Gravitational Search Algorithm", *National Academy Science Letters*, Springer, Vol. 36, Issue 5, pp 527-534, October 2013, (IF=0.331).[Q2 Full Paper](#)
63. Pinkey Chauhan, **Kusum Deep** and Millie Pant: "Novel Inertia Weight strategies for Particle Swarm Optimization", *Memetic Computing*, Vol. 5, Issue 3, pp.229- 251, 2013, (IF=2.674).[Q1 Full Paper](#)
64. **Kusum Deep** and Kedar Nath Das: "A novel hybrid genetic algorithm for constrained optimization", *International Journal of System Assurance Engineering and Management*, Springer, Vol. 4, Issue 1, pp. 86-93, 2013. [Full Paper](#)

65. **Kusum Deep** and Dipti: "Proposed Memetic Algorithms for Global Optimization", International Journal of Mathematical Modeling, Simulation and Applications, Vol. 5, No. 2, pp. 129-139, 2012.
66. Yadav, A, **Kusum Deep** and Kumar, S : "Metaheuristic Technique for Finding Earthquake Locations in NW Himalayan Region", Advances in Geosciences, Vol 31, pp. 1-10, 2012. [Full Paper](#)
67. Harish Sharma, J. C. Bansal and **Kusum Deep**: "Dynamic Swarm Artificial Bee Colony Algorithm", International Journal of Applied Evolutionary Computations, Vol. 3, No. 4, pp. 19-33, 2012. [Full Paper](#)
68. **Kusum Deep**, Pinkey Chauhan, Millie Pant, "New Hybrid Discrete PSO for Solving Non-Convex Trim Loss Problem" International Journal of Applied Evolutionary Computation , Vol. 3, Issue 2, pp. 19-41,2012. [Full Paper](#)
69. J. C. Bansal and **Kusum Deep**: "A Modified Binary Particle Swarm Optimization for Knapsack Problems", Applied Mathematics and Computation, Vol. 218, Issue 22, July 15, 2012, Pages 11042-11061, (IF=3.092). [Q1 Full Paper](#)
70. **Kusum Deep** and HadushMebrahtu: "Variant of partially mapped crossover for the Travelling Salesman problem", International Journal of Combinatorial Optimization Problems and Informatics, Vol. 3, No.1, pp. 47-69, Jan-April 2012. [Full Paper](#)
71. . **Kusum Deep**, Shashi Barak, V. K. Katiyar, Atulya Kumar Nagar: "Minimization of Molecular Potential Energy Function Using newly developed Real Coded Genetic Algorithms", International Journal of Optimization and Control Theories and Applications (IJOCTA), Vol. 2, No. 1, pp. 51-58, 2012. [Full Paper](#)
72. Anupam Yadav, **Kusum Deep** and Sushil Kumar: "An Harmonic Potential Well Based Particle Swarm optimization", Journal of Information and Operations Management, Vol. 3, Issue 1, pp-70-72, 2012.
73. **Kusum Deep**, Anupam Yadav and Sushil Kumar: "Improving Local and Regional Earthquake Locations using an Advanced Inversion Technique-Particle Swarm Optimization", World Journal of Modelling and Simulation, Vol.8, No.2, pp.135-141, 2012. [Full Paper](#)
74. **Kusum Deep**, V.K. Katiyar and Shashi: "Minimizing Lennard-Jones Potential Using a real coded Genetic Algorithm and Particle Swarm Optimization", World Journal of Modelling and Simulation, UK, Vol. 7, No. 4, pp. 312-320, 2011.
75. **Kusum Deep** and Hadush Mebrahtu: "Combined Mutation Operators of Genetic Algorithm for the Travelling Salesman Problem", International Journal of Combinatorial Optimization Problems and Informatics, Vol. 2, No. 3, pp. 2- 24, 2011. [Full Paper](#)
76. **Kusum Deep**, K. P. Singh and M. L. Kansal: "Genetic Algorithm based Fuzzy Weighted Average Application in Multi-Criteria Decision Making Problems", Opsearch, Springer, Vol. 48, No.2, pp. 96-108, 2011. [Full Paper](#)
77. Pinkey Chauhan, **Kusum Deep** and Millie Pant: "Optimizing CNC Turning Process Using Real Coded Genetic Algorithm and Differential Evolution" Global Journal of Technology and Optimization, Vol. 2, No.2, pp. 157-165, June 2011. [Full Paper](#)
78. **Kusum Deep**, Krishna Pratap Singh, M. L. Kansal and C. Mohan: "An Interactive Method Using Genetic Algorithm for Multi-Objective Optimization Problems Modeled in Fuzzy Environment", Expert Systems with Applications, Volume 38, Issue 3, March 2011, Pages 1659-1667, (IF=4.292). [Q1 Full Paper](#)
79. **Kusum Deep**, Pinkey Chauhan, Millie Pant: "Optimizing Machining Parameters using a Novel Real Coded GA", International Journal of Applied Mathematics and Mechanics, Vol.7, Issue 3, pp. 53-69, 2011.
80. **Kusum Deep**, Anupam Yadav and Sushil Kumar: "Determining Earthquake Locations in NW Himalayan Region: An Application of Particle Swarm Optimization", International Journal of Computational Science and Mathematics, Vol. 3, No. 2, pp. 173-181, 2011. [Full Paper](#)
81. **Kusum Deep** and HadushMebrahtu: "New Variations of Order Crossover for Travelling Salesman Problem", International Journal of Combinatorial Optimization Problems and Informatics, Vol. 2, No. 1, Jan-April, pp. 2-13, 2011. [Full Paper](#)
82. **Kusum Deep** and Madhuri Arya: "Minimization of Lennard-Jones Potential Using Parallel Particle Swarm Optimization Algorithm", Contemporary Computing, Communications in Computer and Information Science, Vol. 94, No.3, pp. 131-140, 2010.
83. **Kusum Deep**, Madhuri Arya and Shashi Barak: "A New Multi-Swarm Particle Swarm Optimization and Its Application to Lennard-Jones Problem", INFOCOMP, Journal of Computer Science, Vol. 9, No. 3, Sept. 2010, pp. 52- 60. [Full Paper](#)
84. J. C. Bansal and **Kusum Deep**: "Quadratic Approximation PSO for Economic Dispatch Problems with Valve-Point Effects", Swarm, Evolutionary, and Memetic Computing, Lecture Notes in Computer Science, 2010, Volume 6466 / 2010, pages 460-467.

85. O.P. Dubey, **Kusum Deep** and M. K. Singh: "Application of Genetic Algorithm to Quadratic Preferred Goal Programming", *International Journal of Optimization: Theory, Methods and Applications*, Vol. 2, No. 4, pp. 283-301, 2010.
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66. J. C. Bansal, **Kusum Deep**, KalyanVeeramachaneni 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.
67. J. C. Bansal and **Kusum Deep**: “Optimal Design of Water Distribution Networks via Particle Swarm Optimization”, IEEE International Advanced Computing Conference, March 6-7, 2009, Patiala, IEEE Explore, pp. 1314 – 1316, DOI: 10.1109/IADCC.2009.4809206
68. 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
69. **Kusum Deep**, Optimization of Power Systems using Real Coded Genetic Algorithms, International Conference on Power Control and Optimization, Chiang Mai, Thailand, July 18 – 20, 2008, Innovation in Power Control for Optimal Industry. AIP Conference Proceedings, Volume 1052, pp. 5-16, 2008, DOI: 10.1063/1.3008694

70. **Kusum Deep** and J. C. Bansal: "A Socio-Cognitive Particle Swarm Optimization for Multi-Dimensional Knapsack Problem," First International Conference on Emerging Trends in Engineering and Technology (ICETET 2008), Nagpur, July 16–18, 2008, IEEE Explore, pp. 355-360, 2008, DOI: 10.1109/ICETET.2008.163
71. **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
72. **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.
73. **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.
74. **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.
75. **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.
76. **Kusum Deep** 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.
77. 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.
78. 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.
79. **Kusum Deep** and Millie Pant: "The I-GRST Algorithm for Integer and Mixed Integer Optimization Problems", Anna University, Chennai, December 27 – 30, 2002.
80. **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.
81. 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.
82. **Kusum Deep** and Millie Pant: "Some New Algorithms for Obtaining Global Solution of Non Linear Optimization Problems", Indian Science Congress, Lucknow, Jan 5, 2002.
83. **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.
84. **Kusum Deep** and Millie Pant: "Genetic Random Search Technique for solving Large Scale Non Linear Programming Problems", NSMMA Conference, IIT Madras, Dec 22, 2001.
85. **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.
86. **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.
87. 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
88. **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
89. **Kusum Shanker** , C. Mohan and K.N. Khattri: "The Flexible Tolerance Method of Nonlinear Optimization for the Inversion of Gravity Data", 18th Annual 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.

Book Chapters

1. Dipti Singh, Seema Agrawal and **Kusum Deep**: "C-SOMAQL: 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 10.1007/978-3-319-28161-27.
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 in Computational Intelligence 626, pp. 167-186, DOI 10.1007/978-3-319-28161-28.
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 10.1007/978-3-319-28161-29.
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. Page 18 of 36
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

- 1994
- 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"
 - 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"
 - 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"
 - 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"
 - Project Completion Report entitled "A Study of Parallel Heuristic Algorithms for use in Global Optimization", submitted to Commission of European Communities, Brussels
- 1992
- Report entitled "state-of-the-art Report on Prognostic Modeling of Landslides", Department of Science and Technology, Govt. of India
 - 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
- 1988
- Ph. D Thesis entitled "Computational Algorithms for Global Optimization Problems and their Applications with particular reference to Geophysics", University of Roorkee


Review/Research Reports (continued)

- 1983  M. Phil Dissertation entitled “Use of Optimization Techniques in Geophysical Prospecting”, University of Roorkee


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.](#)
-  ”Nature Inspired Optimization - An Introduction”, jointly with Prof C. Mohan Tata McGraw Hill (Under process)









Edited Book Series

-  [Algorithms for Intelligent Systems, Springer, ISSN: 2524-7565.](#)
Series Editors: Bansal, Jagdish Chand, Deep, Kusum, Nagar, Atulya K

Edited Book

-  Shishir K. Shandilya, Smita Shandilya, Kusum Deep and Atulya K. Nagar: [Handbook of Research on Soft Computing and Nature-Inspired Algorithms, IGI Global, SCOPUS, Release Date: March, 2017.](#)

International Conference Proceedings Edited

-  Nagar, A.K., Deep, K., Bansal, J.C., Das, K.N. (Eds.) Series: Advances in Intelligent Systems and Computing. Proceedings, 9th International Conference on Soft Computing for Problem Solving, SocProS 2019, [Vol. 1](#) and [Vol. 2.](#)
-  Das, K.N., Bansal, J.C., Deep, K., Nagar, A., Ponnambalam, P., Naidu, R.C. (Eds.) Series: Advances in Intelligent Systems and Computing. Proceedings, 8th International Conference on Soft Computing for Problem Solving, SocProS 2018, [Vol. 1](#) and [Vol. 2.](#)
-  Yadav, N, Yadav A, Bansal,J.C., Deep, K., Kim, J.H. (Eds.) Series: Advances in Intelligent Systems and Computing. Proceedings, 7Th International Conference on Harmony Search and Nature Inspired Optimization Algorithms ([ICHSA 2018](#))
-  Bansal,J.C., Das,K.N., Nagar, A.K., Deep, K., Ojha, A.K. (Eds.), Series: Advances in Intelligent Systems and Computing. Proceedings of the Seventh International Conference on Soft Computing for Problem Solving, SocProS 2017, [Vol. 1](#) and [Vol. 2.](#)
-  Deep, K., M. Jain and Said Salhi (Eds.) Series: Asset Analytics, Proceedings, International Conference on Recent Trends in Operations Research and Statistics, (RTORS 2017).[Performance Prediction and Analytics of Fuzzy, Reliability and Queueing Models, Logistics, Supply Chain and Financial Predictive Analytics. and Decision Science in Action](#)
-  Deep, K., Bansal,J.C.,Das,K.N., Lal, A.K., Garg, H., Nagar, A.K., Pant, M. (Eds.) Series: Advances in Intelligent Systems and Computing. Proceedings, 6th International Conference on Soft Computing for Problem Solving, SocProS 2016, [Vol. 1](#) and [Vol. 2.](#)
-  Pant, M., Deep, K., Bansal, J.C., Nagar, A., Das, K.N. (Eds.) Series: Advances in Intelligent Systems and Computing, Vol. 416, 2016, Proceedings, 5th International Conference on Soft Computing for Problem Solving SocProS 2015, [Vol. 1](#) and [Vol. 2.](#)
-  Das, K.N., Deep, K., Pant, M., Bansal, J.C., Nagar, A. (Eds.) Series: Advances in Intelligent Systems and Computing, Vol. 335, 2014, Proceedings, 4th International Conference on Soft Computing for Problem Solving SocProS 2014, [Vol. 1](#) and [Vol. 2.](#)

International Conference Proceedings Edited (continued)

- Pant, M., Deep, K., Nagar, A., Bansal, J.C. (Eds.) Series: Advances in Intelligent Systems and Computing, Vol. 258, 2014, Proceedings, 3rd International Conference on Soft Computing for Problem Solving SocProS 2013, [Vol. 1](#) and [Vol. 2](#).
- Babu, B.V.; Nagar, A.; Deep, K.; Pant, M.; Bansal, J.C.; Ray, K.; Gupta, U. (Eds.) Series: Advances in Intelligent Systems and Computing, Vol. 236, 2013, Proceedings, 2nd International Conference on Soft Computing for Problem Solving ([SocProS 2012](#))
- J. C. Bansal, P. K. Singh, Kusum Deep, Millie Pant, Atulya K. Nagar (Eds.) Series: Advances in Intelligent Systems and Computing, Vol. 201 and Vol. 202, Proceedings, 7th International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012), [Vol. 1](#) and [Vol. 2](#).
- K. Deep, A. K. Nagar, Millie Pant, J. C. Bansal (Eds.), Series: Advances in Intelligent and Soft Computing, Vol. 130 and Vol. 131, 2012, Proceedings, 1st International Conference on Soft Computing for Problem Solving (SocProS 2011), [Vol. 1](#) and [Vol. 2](#).

Executive Editor

- [International Journal of Swarm Intelligence, Inderscience](#)

Member of Editorial Board

- [American J. of Operations Research, Scientific Research Pub., USA.](#)
- [Inter. J. of Advanced Intelligence Paradigms \(IJAIP\), Inderscience.](#)
- [Inter. J. of Applied Evolutionary Computations, IGI Publisher, USA](#)
- [Inter. J. of Combinatorial Optimization Problems and Informatics, Mexico.](#)
- [Inter. J. of Convergence Computing, Inderscience](#)
- [Inter. J. of Intelligent Learning Systems and Applications, Scientific Research Publishing](#)
- [Inter. J. of Knowledge Engineering & Soft Data Paradigms, Inderscience](#)
- [Inter. J. of Swarm Intelligence Research, IGI Publisher, USA.](#)
- [International Journal of Computational Intelligence Studies, Inderscience](#)
- [International Journal of System Assurance Engineering and Management, Springer.](#)
- [Journal of Hybrid Computing Research, Serial Publishers](#)
- [OPSEARCH, Springer](#)
- [Scientific Journal International, USA.](#)
- [World Journal of Modeling and Simulation, World Academic Union, UK](#)

Reviewer of Journals

- [IEEE Transaction of Evolutionary Computations](#)
- [IEEE Transactions on Automation Science and Engineering](#)
- [IEEE Transactions on System, Man and Cybernetics – Part A, Systems and Humans](#)
- [Advances in Engineering Software, Elsevier](#)
- [Applied Mathematics and Computations, Elsevier](#)
- [Applied Soft Computing, Elsevier](#)
- [Artificial Intelligence, Elsevier](#)
- [Biosystems, Elsevier](#)

Reviewer of Journals (continued)

- 📖 **Computers & Operations Research, Elsevier**
- 📖 **Egyptian Informatics Journal, Elsevier**
- 📖 **Engineering Applications of Artificial Intelligence, Elsevier**
- 📖 **European Journal of Operational Research, Elsevier**
- 📖 **Expert Systems With Applications, Elsevier**
- 📖 **Information Sciences, Elsevier**
- 📖 **Journal of Computational Science, Elsevier**
- 📖 **Journal of Molecular Graphics and Modelling, Elsevier**
- 📖 **Mathematical and Computer Modeling, Elsevier**
- 📖 **Measurement, Elsevier**
- 📖 **Neurocomputing, Elsevier**
- 📖 **Swarm and Evolutionary Computation, Elsevier**
- 📖 **Applied Intelligence, Springer**
- 📖 **Natural Computing, Springer**
- 📖 **Opsearch, Journal of Operational Research Society of India, Springer**
- 📖 **Advances in Fuzzy Systems, Hindawi Publishing Corporation, USA and Egypt**
- 📖 **Engineering Optimization, Taylor and Francis**
- 📖 **Inter. Journal of Information Technology & Decision Making, World Scientific.**
- 📖 **Iranian Journal of Fuzzy Systems, University of Sistan and Baluchistan, Iran**
- 📖 **Knowledge-based & Intelligent Engineering Systems, IOS Press, Netherlands**
- 📖 **Majlesi Journal of Electrical Engineering, DOAJ**

International Collaboration

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

- 📖 **Prof. Sayedali Mirjalili**
Associate Professor
Torrens University
Center for Artificial Intelligence Research and Optimization
Australia

- 📖 **Prof. Mukesh Prasad**
University of Technology Sydney
Australia

- 📖 **Prof. Song Ping Zhou**
University of Wollongong
Australia

International Collaboration (continued)

- **Prof. Prof. Joong Hoon Kim**
Professor, School of Civil, Environmental and Architectural Eng
Korea University
South Korea

- **Prof. Oleg Monakhov**
Principal Scientist
Institute of Computational Mathematics and Mathematical Geophysics
Russian Academy of Sciences, Siberian Branch
Lavrentiev pr. 6, Novosibirsk, 630090, Russia

- **Prof. Lisa Ann Osadciw**
Department of Electrical Engineering and Computer Science
Syracuse University
NY -13244, USA

Industry Interaction

- **Dabur. New Delhi**
- **Wadia Institute of Himalayan Geology, Dehradun**
- **Snow and Avalanche Study Establishment, DRDO Chandigarh**
- **Sanskriti Health Care Pvt. Ltd, Haridwar**

Membership of Professional Bodies

- International**
 - **Machine Intelligence Lab, (MIR Labs), USA**
 - **Senior Member, International Association of Computer Science and Information Technology, Singapore, Member No.: 80342828.**
 - **Member, Intelligent Systems, Knowledge Based and Intelligent Information and Engineering Systems, KES International, England**
 - **Researcher ID : C-5028-2011**
 - **MetaPress ID: 252-19-640**
- National**
 - **President, [Soft Computing Research Society](#)**
 - **Secretary, Forum of Interdisciplinary Mathematics**
 - **Senior Life Member, Computer Society of India (00011847)**
 - **Life Member, Indian Mathematical Society (S-86-088)**
 - **Life Member, Operations Research Society of India (ID: 0586/K/02/MSL)**
 - **Life Member, Indian Science Congress, L9576**
 - **Life Member, Indian Society of Applied and Industrial Mathematics (K-84)**
 - **Member, VijnanaParishad of India**
 - **Member, Advance Computing Society of India**
 - **Universal Association of Computer and Electronics Engineers (ID: IN0078698.)**
 - **Honorary Member, Advanced Advances in Control and Optimization of Dynamical Systems (ACODS)**

International Conferences Organized

- **Convenor, 10th International Conference on Soft Computing for Problem Solving, December 18-20, 2020, IIT Indore.**
- **Convenor, 9th International Conference on Soft Computing for Problem Solving, September 2-4, 2019, Proceedings by Springer, Liverpool Hope University, UK**
- **Convenor, 8th International Conference on Soft Computing for Problem Solving, December 17-19, 2018, Proceedings by Springer, VIT Vellore,**
- **Convenor, 4th International Conference on Harmony Search, Soft Computing and Applications (ICHSA 2018), February 7-9, 2018, Proceedings by Springer, BML Munjal University, Gurugram**
- **Convenor, International Conference on Recent Trends in Operations Research and Statistics, December 28-30, 2017, Proceedings by Springer, IIT Roorkee**
- **Convenor, 7th International Conference on Soft Computing for Problem Solving, December 23-24, 2017, Proceedings by Springer, IIT Bhubaneswar**
- **Convenor, 6th International Conference on Soft Computing for Problem Solving, December 23-24, 2016, Proceedings by Springer, Thapar University, Patiala.**
- **Convenor, 5th International Conference on Soft Computing for Problem Solving, December 18-20, 2015, Proceedings by Springer, IIT Roorkee, India.**
- **Convenor, 4th International Conference on Soft Computing for Problem Solving, December 27-29, 2014, Proceedings by Springer, NIT Silchar, India.**
- **Convenor, 3rd International Conference on Soft Computing for Problem Solving, December 26-28, 2013, Proceedings by Springer, Greater Noida Extension Centre of IIT Roorkee.**
- **Special Session on "Swarm Intelligence for Global Optimization", 2013 IEEE Symposium Series on Computational Intelligence, April 15-19, 2013, Singapore.**
- **Publicity Chair, IEEE Congress on Evolutionary Computation, June 20-25, 2013, Mexico.**
- **Asia liaison Officer & Senior Program Committee Member, 4th IEEE International Conference on Information, Intelligence, Systems and Applications, July 10-12, 2013, Piraeus (Athens), Greece.**
- **Convenor, 2nd International Conference on Soft Computing for Problem Solving, December 28-30, 2012, JKL University, Proceedings by Springer, Jaipur.**
- **Convenor, 7th International Conference on Bio-Inspired Theories and Applications, Dec 14-16, 2012, ABV-IIITM, Proceedings by Springer, Gwalior.**
- **Convenor, International Conference on Soft Computing for Problem Solving (SocProS 2011) December 20-22, 2011, IIT Roorkee Campus**

NPTEL Courses Conducted

- **Course on "Operations Research" July- August 2019**
- **Course on "Operations Research" July- August 2020**

Courses Conducted

- **Co-ordinator, SCRS sponsored Two Days' Workshop on Swarm and Evolutionary Algorithms: Theory and Applications, March 17-18, 2018, Maths Dept, IIT Roorkee**
- **Co-ordinator, SCRS sponsored One Day Workshop on Optimization, August 25, 2017, CBRI Roorkee.**
- **Co-ordinator, QIP Sponsored Short Term Course, Stochastic Modeling and Optimal Control of Engineering Systems, May 22-26, 2017, IIT Roorkee.**

Courses Conducted (continued)

- Co-ordinator, QIP Sponsored One Day Workshop, CUDA Programming, Dec 27, 2013, Greater Noida Extension Centre of IIT Roorkee.
- Coordinator, AICTE Sponsored QIP Short Term Course, Recent Advances in Genetic Algorithms and their Applications in Engineering Design, June 25-29, 2012, IIT Roorkee.
- Coordinator, MIR Labs, USA sponsored Machine Intelligence Research Lab Day, June 13, 2011, The Institution of Engineers (India), Roorkee Local Chapter.
- 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
- Coordinator, One day Workshop entitled “Optimization Tool Box”, under MHRD sponsored Project SOS, February, 16, 2010, Electrical Eng. Dept. IIT Roorkee
- Coordinator, Course on “Recent Advances in Optimization Techniques & their Applications”, May 20 – 24, 2009, Continuing Education Dept, IIT Roorkee.
- Finishing School Programme, Continuing Education, IIT R, 2009
- Finishing School Programme, Continuing Education, IIT R, 2008.
- Finishing School Programme, Continuing Education, IIT R, 2007
- Live broadcast from EMMRC, IITR, entitled “Linear Programming”, Oct. 25, 2007.
- 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.

Electronics & ICT Academies at IIT Roorkee

- Delivered lecture on Nature Inspired Optimization
- Delivered lecture on Genetic Algorithms
- Delivered on Particle Swarm Optimization

Edusat Talk

- Live broadcast from EMMRC, IITR, on October 25, 2008 entitled “Linear Programming”

Administration

- Warden Wellness, Sarojini Bhawan and Married Hostel, 2020
- Member, Departmental Faculty Assessment Committee (DFAC) ,Maths Dept, IITR, w.e.f. 2018 till 2020
- Chairperson, Screening/selection Committee for recruitment of project/research staff, under sponsored research and consultancy projects, w.e.f. Jan 1, 2018 to March 31, 2018.
- Member, High Speed Internet Facility, IIT Roorkee, May 2017 to May 2020
- Member, Institute Library Committee, Sept. 1, 2016 to 2017
- Member, Institute Research Committee, IIT Roorkee, 1.9.2018 to 31.8.2020
- DRC Chairperson, Maths. Dept from September 1, 2018 till August 31, 2020
- Member, Institute Research Committee, IIT Roorkee, 1.9.2014 to 31.8.2016
- 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

Administration (continued)

- Nominated Member, Senate IIT Roorkee, from 1.1.2012 to 1.11.2012
- 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

- Liverpool Hope University, UK, September 2019
- University of Technology, Sydney, Australia, July 2019.
- University of Wollongong, Australia, July 2019.
- Macquarie University, Australia, Dec 4-6, 2017
- Korea University, Korea, August 19-21, 2015.
- Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia, June 13, 2012.
- Centre for Applicable Mathematics and Systems Science (CAMSS), Liverpool Hope University, Liverpool, United Kingdom, February 1, 2011
- IEEE Fifth International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2010), Liverpool Hope University, Liverpool, United Kingdom, September 8 - 10, 2010.
- National University of Singapore, Sept. 24, 2007.
- Univ. of Birmingham, United Kingdom, Oct. 12, 2006
- Univ. of Nottingham, United Kingdom, Oct. 14, 2006

Invited Talks in India

- Invited Talk, 33rd Annual Conference of Ramanujan Mathematical Society, Department of Mathematics, University of Delhi, June 1-3, 2018.
- Invited Talk, Applications of Graph & Network in Computational Studies, Bioinformatics, Engineering and its Technical Terminology. Jawahar Lal Nehru University, Delhi, March 12-14, 2018.
- Invited Talk, Mathematics Department, Panjab University, Chandigarh, February 27, 2018.
- Plenary Talk, 5th International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS), APJ Abdul Kalam Missile Complex, DRDO, Hyderabad, February 18-22, 2018
- Invited Talk at ManavRachna University, in February 2017
- Invited Talk, Workshop at Maths. Dept, IIT Roorkee, November 2016.
- Chief Guest and Keynote address during 3 days National Workshop on Nature Inspired Optimization Techniques”, at MNIT Jaipur on October 21, 2016.
- Invited Talk on Optimization Techniques at IIT Roorkee, October 15, 2016
- Invited Talk at JIIT Noida, Sept 19, 2016
- Invited Talk, One day workshop on “Nature Inspired Algorithms and its’ Applications in Engineering”, March 28, 2016, Gautam Buddha University, Greater Noida.
- Invited Talk, One day workshop on Nature Inspired Optimization Techniques, March 19, 2016, South Asian University

Invited Talks in India (continued)

- 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.
- Invited Talk: R Systems Pvt. Ltd, Noida, Feb 11, 2014.
- Invited Talk: South Asian University, New Delhi, Feb 5, 2014
- Keynote address: “International Conference on Reliability, Optimization and Information Technology”, Feb 6-8, 2014 on Feb 6, 2014.
- 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”.
- 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?”
- 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?”
- 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”.
- 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?”
- Resource Person, Workshop on Scientific Computing: Theories and Practices, October 8-13, 2012, Gurukul Kangri University, Haridwar
- Resource Person, Continuing Education Program “Soft Computing Methods for Data Mining & Decision Making”, DRDO, Chandigarh, July 2-6, 2012.
- 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.
- Resource Person, Parul Institute of Engg. & Tech., Vadodara, May 3-5, 2012
- 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.
- Delivered Expert Lecture in MPCST Sponsored National Seminar RAWT at NRI Institute of Information Science and Technology, Bhopal, 30th March, 2011.
- Resource Person at National Workshop on “Meta Heuristics and IT Researchers”, ABVIIITM, Gwalior, November 22-23, 2010.
- Resource Person at Meerut Engineering College, 2009.
- “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.
- “Recent Advances in Real Coded Genetic Algorithms”, 40th Annual Convention of ORSI (Golden Jubilee Celebrations) INSA, Delhi, Dec.4-6, 2007
- “Genetic Algorithms – I and Genetic Algorithms – II”, Workshop on Optimization & Applications, University of Delhi, Delhi Chapter, ORSI, Nov. 29-Dec. 3, 2007.

Invited Talks in India (continued)

- “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.
- “Population based Heuristics for Optimization of Engineering Design Problems”, 51st Congress of Indian Society of Theoretical and Applied Mechanics, ISTAM – 2006, Vishakapatnam, December 18 – 21, 2006.
- “Numerical Optimization of Real Life Problems”, First National Conference on Mathematical Techniques Emerging Paradigms for Electronics & IT Industries (MATEIT 2006) held at DeenDayalUpadhaya College, Univ. of Delhi, March 22–25, 2006.
- “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

- Advanced Topics in Nature Inspired Optimization Techniques, Pre-PhD
- Evolutionary Algorithms for Pre-PhD
- Parallel Computing, for M. Phil
- Parallel and Distributed Computing for MCA
- Numerical Optimization for 5 Year Integrated Course.
- Operations Research – I for 5 Year Integrated Course
- Operations Research – II for 5 Year Integrated Course
- Operations Research – III for 5 Year Integrated Course
- 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.

M.Tech Thesis Guided

- 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

- Neeta Sharma (1990) An Interactive Package in Pascal for Inversion of Gravity Data in Geophysical Prospecting
- Seema (1993) A Controlled Random Search Technique for Solving Global Optimization Problems on PC in C Language
- Sunil Chandra (1997) Optimal Design of some Real Life Problems
- Pankaj Goel (1997) Optimal Design of Dwelling – Layout Systems
- Arjun Singh (1999) To Design an Optimization Technique using Neural Networks

M. Phil Thesis Guided (continued)

- Sarika Gupta (1999) Computational Parallel Global Optimal Techniques

MCA Thesis Supervised

- Kumar Pal Suresh Singh (Dec 8, 2001) Parallel Global Optimization Techniques on PARAM 10000
- Suresh Kr. Singh (May 2002) Heterogeneous Network Accounting Package (NT)
- Kumar Pal (May 2002) Explosion and Fire Simulation
- Shiv Kr. Verma and Anil Kumar (December 2002) Development of software for Representing Track Geometry variations by Power Spectral Density
- Anurag Singh and Vikas Gupta (December 2002) A scheme for Realistic Real – Time Rendering of Animated Virtual Worlds using Parallel Processing Techniques
- Vikas K Verma (May 2003) Deposit Management System
- Kamal Singh Nigam (May 2003) Visuals Claims
- Sachin Agarwal (May 2003) Workflow Management System for Mahindra and Mahindra
- Anurag Singh (May 2003) Design, Implementation, Testing, Procedural Texture Library
- Dheeraj Kr. V.K.Bhardwaj, Amit K Alok K (December 2003) Implementation of Router on Linux
- Vineet Kumar Bharadwaj (May 2004) Development of Web based Query Engine for 7th All India School Education Survey conducted by NCERT and NIC
- Savita (May 2004) Data Recovery of Deleted AutoCad drawings from Hard Disk
- Amit Kumar (May 2004) Web Designing on E – governance activities
- Alok Kumar (May 2004) Telephone Line Testing in EWSD Exchange
- Pawandeep, Satinder Pal, Yogesh (December 2004) Conversion of XML Data File to PDF & WML Format
- Pawandeep (May 2005) Extreme Regression Tool – Implemented as a Web Service
- Sunil Kumar (May 2005) Order Management System (Co-Supervisor: Umesh Ghildiyal, Wipro, Gurgaon)
- Satinder Pal (May 2005) Interviewer Database (Co-Supervisor: K. Sharath Chandra, Amsoft Systems Pvt. Ltd., Gurgaon)
- Beshiela Najiar (May 2006) Development of Online form for Meghalaya (Schedule Tribe Certificate) (Co-Supervisor: Timothy Dkhar, State Informatics Officer, National Informatics Centre, Meghalaya State Unit, Shilong)
- Abhinav Pandir (May 2006) Linux over Solos (Co-Supervisor: Varinder Paul Singh, Conexant System, NOIDA)
- Kanchan Joshi (May 2006) VASR & Anti Virus Automation (Co-Supervisor: Gaganeet Singh, Senior Software Engineer, Solidcore, NOIDA)
- Abha Awasthi, Purnima Agarwal, Gurleen Kaur, Ritu Sodhi (December 2007) Parallel Implementation of Sorting Algorithms on a Linux Cluster
- Anuj Shara, Kailash Chand, S. S. Gussain (December 2007) Extended Indexed File Systems (EXIFS)
- Gurleen Kaur (May 2008) Development of an Integrated Backup and Restart Procedure for M5 solution (Co-Supervisor: Vishal Sharma, Genband Tech. Noida)
- Purnima Agarwal (May 2008) Integrating Components into Management Platform in a Model Driven Approach (Co-Supervisor: S. Giridharan, SAP Labs India, Bangalore)

MCA Thesis Supervised (continued)

- Ritu Sodhi (May 2008) Creating Selenium Tests for a Project Management Application (Co-Supervisor: Indraneel Chowdhary, Global Logic, Noida)
- Aashish K, Seema Ahluwalia, Seeva kumar (November 2008) Extension of Resource Reservation Protocol to provide QoS
- Nishant Saxena (May 2009) Automation of Build, Integrated Testing, Regression and Static Code Analysis of Decomposer and DecABI (Co-Supervisor: Netra Deshpanda, Symantec Co-op, Pune)
- Akhil Agrawal (May 2009) Report Generation Tool for Symantec Security Information Manager (Co-Supervisor: Shymal Pandya, Symantec Co-op, Pune)
- Paras Malik Robin Suri, Tejas Patgonker (December 2009) Bitmap Image Processor
- Paras Malik (May 2010) Enhancing current frameworks and developing new frameworks for automatic testing and client side debugging (Co-Supervisor: Shyam Raikar, NVIDIA Graphics Pvt. Ltd, Pune)
- Robin Suri (May 2010) Enhancing Network Integrity and Object Integrity modules in Enterprise Security Manager (Co-Supervisor: Jogesh Sharma, Symantec Corporation, Pune)
- Manish Kumar Gaurav, Pranav Kumar Singh, Ishan Tajram Varade (November 2010) Stock Market Forecasting System
- Pranav Singh (May 2011) Kernel logging Infrastructure (Vxlogger) for Veritas volume manager (VxVM) (Co-Supervisor: Prasad Limaye, Symantec, Pune)
- Gaurav Kumar Singh (May 2012) Enhancement of SPE for scanning Powered Off VMs using VDDK 1.1 and Development of SPE – Traffic Monitor (Co-Supervisor: Sushrut Mair, Principal Software Engineer Symantec Corporation, Pune)
- Niraj Kumar Pandey (May 2012) UI Design and Development of MaaS360 Web Services (Co-Supervisor: Ameya Kulkarni, Lead Software Engineer FiberlinkIndia Pvt. Ltd., Bangalore)
- Nitin Gupta Bhanu Damir Niranjan Bara (November 2012) Parallel Nature Inspired Optimization Techniques using CUDA
- Nitin Gupta (May 2013) Noise Reduction using CUDA (Co-Supervisor: N. Avadanam, NVIDIA Graphice Pvt. Ltd, Bangalore)
- Bhanu Damir (May 2013) Implementation of Parallel Optimization Techniques using Nvidia CUDA for the eN10 parallelization (Co-Supervisor: Amreek Singh, SASE, DRDO Chandigarh)
- Abhishek Kumar Adarsha Kumar Rahul Sachan (November 2013) Nature Inspired Optimization Techniques Using Parallel Computing with CUDA
- Rahul Sachan (May 2014) Adiquity user interface development (Co-Supervisor: Y. Prabhakar Reddy AdIQuity Technologies Pvt. Ltd)
- Adarsha Kumar (May 2014) Improving Installer Performance & Experience (Co-Supervisor: Bishnu Chaturvedi, Sr Software Engineer, Data Loss Prevention Symantec Corporation)
- Abhishek Kumar (May 2014) Enhancement to Tools and Tests for CUDA Performance Analysis (Co-Supervisor: Mr. SanjivSatoor, Sr. Manager compute, Nvidia Graphics Pvt. Ltd, Pune)
- Heena Rana (May 2015) Integrating Phonegap into Jiwan Books mobile applications (Co-Supervisor: Rajeev Gaur Edefiners Technology, New Delhi)
- Puneet Kumar (May 2015) Human Resource Management System for Egnaro (Co-Supervisor: Narendra Reddy, Egnaro, Hyderabad)
- Heena Rana (May 2015) Integrating Phonegap into Jiwan Books mobile applications (Co-Supervisor: Rajeev Gaur Edefiners Technology, New Delhi)
- Puneet Kumar (May 2015) Human Resource Management System for Egnaro (Co-Supervisor: Narendra Reddy, Egnaro, Hyderabad)

MCA Thesis Supervised (continued)

- Sanjoy Kumar Sardar (May 2015) Employee Portal with Layer Architectures and Security maintenance (Co-Supervisor: Sumeet Malik, Nagarro Software Pvt Ltd., Gurgaon)
- Amit Kumar, Saurabh Kumar, Niraj Kumar Choudhary (November 2015) m-seeker: using voice recognition technology
- Ayush Jaiswal, Sandeep Kumar, Vishwanath Pratap Singh (November 2015) Web based Book Catalogue System
- Sandeep Kumar (May 2016) Our Health An iOS Application (Co-Supervisor: Amit Sharma Mindfire solutions, Noida)
- Ayush Jaiswal (May 2016) Integrating Line of Business Application with Microsoft Office APP's (Co-Supervisor: Jatant Pathak, Office Integrators, Pvt. Ltd.,Pune)
- Sunil Baitha (May 2016) Design of a New Approach of Package Transportation System (Co-Supervisor: Chinmoy Panda, Mindfire Solutions, Bhubaneswar)
- Vishwanath Pratap Singh (May 2016) Server side data download utility for clients (Co-Supervisor: Sridevi B., Amazon, Hyderabad)

MSc Thesis Supervised

- Sonika Malhotra (1997) On the Generation of Pseudo Random Numbers on Personal Computers in FORTRAN
- Vikas Gupta (2000)
- Anuj (2000)
- Arvind Kumar Gupta (2000) Graphical Solution of Real Life Optimization Problems using C++
- Jitender Kumar (December 2000) OOP Approach to Random Search Global Optimization technique and its Application to Air Defence Problems
- Amit Kumar Tyagi (December 2000) Simplex Method for Large Scale Linear Programming Problems and its Applications
- Jitender Kumar (July 2001) Neural Network Approach for Optimization
- Amit Kumar Tyagi (July 2001) Use of Genetic Algorithm in Air Defence Area
- Arun Kumar (December 2001) Analytical Hierarchy Process
- Arun Kumar (July 2002) Aircraft Landings and Takeoffs
- Preet (July 2002) Genetic Algorithm for Real Life Optimization Problems
- Megha (December 2003) Membership Functions in Fuzzy Set Theory
- Megha (May 2004) Genetic Algorithm Approach for Global Optimization
- Ashish Sharma (December 2004) Some Methods for Parallel Computing
- Pankaj K Gupta (December 2004) A Computer Programme for Simplex Method for solving LPP
- Neeshu Jain (December 2004) A Computer Programme for Hooks and Jeeves for solving NLPP
- Ashish Sharma (May 2005) Some Parallel Programs on PARAM 10000 using MPI
- Pankaj Kumar Gupta (May 2005) Solution of some Real Life Nonlinear Optimization Problems using Fletcher and Reeves Method
- Neeshu Jain (May 2005) Solution of some Real Life Nonlinear Optimization Problems using Steepest Descent Method
- Megha Sangtani (December 2005) Study of Kaprekar's Theory of Numbers
- Indeeep Kaur (December 2005) Solution of Timetabling Problem using Genetic Algorithms

MSc Thesis Supervised (continued)

- Megha Sangtani (May 2006) Some Experiments with a Steady State Global Optimization Technique
- Indeep Kaur (May 2006) A Study of Particle Swarm Optimization and Its Application
- Preeti Abhichandani (November 2006) Teaching Aid in 3D Geometry
- Ajanta Trivedi (November 2006) The Sudoku Puzzle
- Ashmeen Kaur Nagpal (November 2006) Optimization in Radiation Treatment Planning
- Ajanta Trivedi (May 2007) Optimal Water-waste Management
- Ashmeen Kaur Nagpal (May 2007) Tumor Treatment – an Optimization Approach
- Priya Kohli (November 2007) A Study of Optimization Models in Rapid Transit Systems
- Mukush Paul (November 2007) Determining the Shortest Routes in Northern Railways
- T. Rama Rao (November 2007) Optimization of Green Building Design using Genetic Algorithms
- T. Rama Rao (May 2008) Reliability Optimization
- Mukesh Paul (May 2008) Air Defence Missile-Target Allocation Models for a Naval Task Group
- Sonam Singh (December 2008) Optimization of Airport Noise
- Pragya (December 2008) An optimization Approach to Drug Designing
- Sonam Singh (May 2009) Solution of Traveling Salesman Problem using Genetic Algorithms
- Pragya (May 2009) Optimization of Launch Vehicles
- Hari Shankar (May 2010) Optimization of Thomson Problem using PSO
- Som Pal (December 2010) Solution of Degenerate LPP using PSO
- Rakesh Meena (May 2012) Application of Response Surface Methodology
- Rakhi Bihar (December 2012) Optimal Design of a Solar Air Heater using Firefly Algorithm
- Bhavya Tripathi (December 2012) Artificial Bee Colony Algorithm
- SK Shahidur Rahman (May 2014) Solving Fractional Programming Problems using PSO
- Saurabh Arora (May 2015) Portfolio Optimization using Nature Inspired Algorithms
- Ashutosh Uopadhyay (May 2015) Solution of Transportation Problem using Genetic Algorithms

IDD Thesis Supervised

- Sunny Malhotra (Spring 2011) Improving Earthwork Operations for Road Design
- Sulabh Mali (Spring 2012) Optimization of Hazardous Waste Blending Problem
- Sunny Malhotra (Spring 2013)
- Razak Gupta (Spring 2013)
- Rajat (Spring 2015) Cutting Stock using Genetic Algorithms
- Nidhi Dabas (Spring 2016) Grey Wolf Optimizer Algorithm for continuous Optimization Problems
- Anshul Anand (Spring 2017) Origami
- Chauhan Vandan (Spring 2017) Origami
- Aplav Garg (Spring 2017) 3-D Modelling of Fractals
- Archie Mehta (Spring 2017) 3-D Modelling of Fibonacci Numbers
- Sushil Sharma (Spring 2017) 3-D Modelling using tinkering lab
- Suyash Mishra (Spring 2017) 3-D Modelling of Hilbert Space

IDD Thesis Supervised (continued)

- **Vishwadeep Gautam (Spring 2017) Deep Learning Approaches in Speech Recognition**
- **Shweta Sisodiya (Spring 2018) k-Shrinking Hypersphere Particle Swarm Optimization**
- **Gaurav Dhingra (Spring 2018) Optimal number of clusters**
- **Maurice Patel (Spring 2018) Predicting future movement of stock using mathematical modelling**
- **Ankit Yadav (Spring 2020) Retail Store Layout Optimization using Genetic Algorithm**
- **Mohit Bhalla (Spring 2020) A study of frequency trends of Heat Waves in Delhi**
- **Ashwany Agarwal (Spring 2020) Credit Card Fraud Detection Analysis Using Machine Learning Algorithms**
- **Mahipal Singh Bhati (Spring 2020) Image Enhancement Using Particle Swarm Optimization**