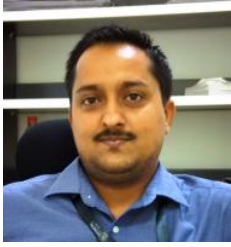


## Profile Page



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### **Research Interests :**

Metaheuristic Techniques, Deep Learning, Data Clustering, Image Mining

### **Journal Publications :**

Year	Journal	Publication
2023	Multimedia Tools and Applications, Springer (IF=2.577)	Vijay Kumar, Sahil Sharma , Distracted Driver Detection using Learning Representations
2023	Artificial Intelligence Review, Springer (IF=9.588)	R Kumar, Vijay Kumar, A Systematic Review on Fruit Fly Optimization Algorithm and its Applications
2023	Archives of Computational Methods in Engineering, Springer (IF=8.171)	A Juneja, V Kumar, S Singla, A Comprehensive Review of Computational Desmogging Techniques
2023	Multimedia Tools and Applications, Springer (IF=2.577)	Pooja Rani, Kamlesh Dutta, Vijay Kumar, Performance Evaluation of Drug Synergy Datasets using Computational Intelligence Approaches
2023	Multimedia Tools and Applications, Springer (IF=2.577)	R.A Zachariah, Sahil Sharma, Vijay Kumar, Systematic Review of Passenger Demand Forecasting in Aviation Industry
2022	Computers in Biology and Medicine, Elsevier (IF=6.698)	Pooja Rani, Kamlesh Dutt, Vijay Kumar, "Artificial Intelligence Techniques for Prediction of Drug Synergy in Malignant Diseases: Past, Present, and Future"
2022	Soft Computing, Springer (IF=3.732)	Manjit Kaur, Dilbag Singh, Vijay Kumar, "Improved seven-dimensional (i7D) hyperchaotic map-based image encryption technique"
2022	Multimedia Tools and Applications, Springer (IF=2.577)	Saloni Laddha, Vijay Kumar, "DGCNN: Deep Convolutional Generative Adversarial Network Based Convolutional Neural Network for Diagnosis of COVID-19"
2022	Multimedia Tools and Applications, Springer (IF=2.577)	Vijay Kumar, Ranjeet Walia, Shivam Sharma, "DeepHumor: A Novel Deep Learning Framework for Humor Detection"

2022	IEEE Transactions on Geoscience and Remote Sensing, IEEE (IF=5.6)	Dilbag Singh, Manjit Kaur, MC Jabaraulla, Vijay Kumar, Hong-Ne Lee, "Evolving fusion-based visibility restoration model for hazy remote sensing images using dynamic differential evolution"
2022	Journal of Healthcare Engineering (IF=3.822)	Vijay Kumar, Rahul Gupta, ?Anis Zarrad, ?Omar Cheikhrouhou, "COV-DLS: Prediction of COVID-19 from X-rays Using Enhanced Deep Transfer Learning Techniques"
2022	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Kamakshi Rautela, Dinesh Kumar, Vijay Kumar, "A Systematic Review on Breast Cancer Detection using Deep Learning Techniques"
2022	IEEE Journal of Translational Engineering in Health and Medicine, IEEE (IF=3.316)	Dilbag Singh, Manjit Kaur, MC Jabaraulla, Vijay Kumar, Hong-Ne Lee, "Artificial Intelligence-based Cyber-Physical System for Severity Classification of Chikungunya Disease"
2022	The Visual Computer, Springer (IF=2.835)	Akshay Juneja, Vijay Kumar, Sunil Singla, "HUDRS: Hazy Unpaired Dataset for Road Safety"
2022	Mathematics (IF=1.555)	Saurabh Kamal, Sahil Sharma, Vijay Kumar, Hammam Alshazly, Hany S. Hussein, Thomas Martinetz, "Towards Financial News Summarization Using Deep Learning and Natural Language Processing"
2022	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Shubhkirti Sharma, Vijay Kumar, "A Comprehensive Review on Multi-Objective Optimization Techniques: Past, Present, and Future"
2022	Traitement du Signal (IF=2.299)	Jatin Sharma, Sahil Sharma, Vijay Kumar, Hany S. Hussain, Hammam Alshazly, "Deepfakes Classification of Faces Using Convolutional Neural Networks"
2022	Diagnostics (IF=3.992)	Saloni Laddha, Sami Mnasri, Mansoor Alghamdi, Vijay Kumar, Manjit Kaur, Malek Alrashidi, Abdullah Almuhaimeed, "COVID-19 Diagnosis and Classification Using Radiological Imaging and Deep Learning Techniques: A Comparative Study"
2022	Biocybernetics and Biomedical Engineering, Elsevier (IF=5.687)	Kamakshi Rautela, Dinesh Kumar, Vijay Kumar, "Dual-Modality Synthetic Mammogram Construction for Breast Lesion Detection using U-DARTS"
2022	Expert Systems, Wiley (IF=2.812)	Vijay Kumar, Dilbag Singh, "Chaotic Spotted Hyena Optimizer for Numerical Problems"
2022	IEEE Journal of Biomedical and Health Informatics, IEEE (IF=7.012)	Dilbag Singh, Manjit Kaur, Vijay Kumar, Hong-Ne Lee, "MLNet: Metaheuristics-based Lightweight Deep Learning Network for Cervical Cancer Diagnosis"
2022	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Neeraj Kumar, Vijay Kumar, Sunil Singla, "Single Image Defogging using Deep Learning Techniques: Past, Present and Future"
2021	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Neeraj Kumar, Vijay Kumar, Sunil Singla, "Single Image Defogging using Deep Learning Techniques: Past, Present and Future"
2021	Applied Intelligence, Springer (IF=5.019)	Dilbag Singh, Manjit Kaur, Vijay Kumar, "Densely connected convolutional networks-based COVID-19 screening model"
2021	Applied Physics B: Lasers and Optics, Springer (IF=2.171)	Ashish Girdhar, Himani Kapur, Vijay Kumar, "A novel Grayscale image encryption approach based on chaotic maps and image blocks"
2021	Wireless Personal Communications, Springer (IF=2.017)	Sahil Sharma, Vijay Kumar, "Performance evaluation of machine learning based face recognition techniques"
2021	Journal of Healthcare Engineering (IF=3.822)	Manjit Kaur, Vijay Kumar, Vaishali Yadav, Dilbag Singh, Naresh Kumar, Nripendra Narayan Das, "Metaheuristic-based Deep COVID-19 Screening Model from Chest X-Ray Images"

2021	Mathematical Problems in Engineering (IF=1.430)	Mahima Dubey, Vijay Kumar, Manjit Kaur, Than-Pan Dao, "A Systematic Review on Harmony Search Algorithm: Theory, Literature, and Applications"
2021	Mathematical Problems in Engineering (IF=1.430)	Minkashi Kalra, Shobhit Tyagi, Vijay Kumar, Manjit Kaur, Wali Khan Mashwani, Habib Shah, Kamal Shah, "A Comprehensive Review on Scatter Search: Techniques, Applications, and Challenges"
2021	PeerJ Computer Science. (IF=2.41)	Vijay Kumar, Dilbag Singh, Manjit Kaur, Robertas Damasevicius, "Overview of current state of research on the application of artificial intelligence techniques for COVID-19"
2021	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Vijay Kumar, Nitin Dogra, "A Comprehensive Review on Deep Synergistic Drug Prediction Techniques for Cancer"
2021	IEEE Access, IEEE (IF=3.467)	Vijay Kumar, Dinesh Kumar, Dilbag Singh, Manjit Kaur, Sahar Ahmed Idris, Hammam Alshazly, "A novel binary seagull optimizer and its application to feature selection problem"
2021	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Akshay Juneja, Vijay Kumar, Sunil Singla, "A Systematic Review on Foggy Datasets: Applications and Challenges"
2021	Computers, Materials & Continua (IF=3.860)	Minakshi Kalra, Vijay Kumar, Manjit Kaur, Sahar Ahmed Idris, ?aban Öztürk, Hammam Alshazly, "A Novel Binary Emperor Penguin Optimizer for Feature Selection Tasks"
2021	Computational Intelligence and Neuroscience (IF=3.120)	Gundeep Singh,?Sahil Sharma,Vijay Kumar,? Manjit Kaur, Mohammed Baz, Mehedi Masud, "Spoken Language Identification using Deep Learning"
2021	Biomedical Signal Processing and Control, Elsevier (IF=5.076)	Ashish Girdhar, Vijay Kumar, Himani Kapur, "Classification of White Blood Cell using Convolution Neural Network"
2021	IEEE Access, IEEE (IF=3.467)	Vijay Kumar, Dilbag Singh, Manjit Kaur, "Screening of COVID-19 Suspected Subjects using Multi-Crossover Genetic Algorithm based Dense Convolutional Neural Network"
2021	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Vijay Kumar, Tarun Agarwal, "A Systematic Review on Bat Algorithm: Theoretical Foundation, Variants, and Applications"
2021	Journal of Experimental & Theoretical Artificial Intelligence, Taylor and Francis (IF=2.296)	Rajani, Vijay Kumar, Dilbag Singh, Manjit Kaur, "Early Diagnosis of COVID-19 Patients Using Deep Learning-based Deep Forest Model"
2021	Sustainability (IF=3.889)	Vijay Kumar, Sahar Ahmed Idris, Sami Bourouis, Hammam Alshazly, "Impact of COVID-19 on Society, Environment, Economy and Education"
2021	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Sahil Sharma, Vijay Kumar, "3D Face Reconstruction in Deep Learning Era: A Survey"
2021	IEEE Transactions on Green Communications and Networking (IF=3.525)	Manjit Kaur, Dilbag Singh, Vijay Kumar, Ahmed A. Abd El-Latif, "Secure and Energy efficient based E-health Care Framework for Green Internet of Things"
2020	Journal of Ambient Intelligence and Humanized Computing, Springer (IF=3.662)	Vijay Kumar, Avneet Kaur, "Binary Spotted Hyena Optimizer and its Application to Feature Selection, Vol. 11, pp. 2625-2645"
2020	Multimedia Tools and Applications, Springer (IF=2.577)	Dilbag Singh, Vijay Kumar, Manjit Kaur, "Image Dehazing using Window-based Integrated Means Filter, Vol. 79, pp. 34771-34793"
2020	Information Sciences, Elsevier (IF=8.233)	Manjit Kaur, Dilbag Singh, Vijay Kumar, Kehui Sun, "Color Image Dehazing using Gradient Channel Prior and Guided L0 Filter, Vol. 521, pp. 326-342"

2020	Multimedia Tools and Applications, Springer (IF=2.577)	Sahil Sharma, Vijay Kumar, "Voxel-based 3D face reconstruction and its application to face recognition using sequential deep learning, Vol. 79, pp. 17303-17330"
2020	Modern Physics Letters B, World Scientific (IF=1.948)	Rajesh Kondabala, Vijay Kumar, Amjad Ali, Manjit Kaur, "A novel astrophysics-based framework for prediction of binding affinity of glucose binder, Vol. 32 (31) , pp. 1-12"
2020	Journal of Ambient Intelligence and Humanized Computing, Springer (IF=3.662)	Gaurav Dhiman, Meenakshi Garg, Atulya Nagar, Vijay Kumar, Mohammad Dehghani, "A novel algorithm for global optimization: Rat Swarm Optimizer"
2020	Journal of Biomolecular Structure & Dynamics, Taylor and Francis (IF=5.235)	Aayush Jaiswal, Neha Gianchandani, Dilbag Singh, Vijay Kumar, Manjit Kaur, "Classification of the COVID-19 infected patients using DenseNet201 based deep transfer learning"
2020	Applied Physics B: Lasers and Optics, Springer (IF=2.171)	Dilbag Singh, Vijay Kumar, Manjit Kaur, "Color image encryption using minimax differential evolution based 7D hyper-chaotic map"
2020	International Journal of Pattern Recognition and Artificial Intelligence, Springer (IF=1.261)	Dilbag Singh, Vijay Kumar, Vaishali Yadav, Manjit Kaur, "Deep Convolutional Neural Networks based Classification model for COVID-19 Infected Patients using Chest X-ray Images"
2020	European Journal of Clinical Microbiology & Infectious Diseases, Springer (IF=5.103)	Dilbag Singh, Vijay Kumar, Vaishali Yadav, Manjit Kaur, "Classification of COVID-19 patients from chest CT images using multi-objective differential evolution based convolutional neural networks, Vol. 39(7), pp. 1379-1389"
2020	Innovation and Research in Biomedical Engineering, Elsevier (IF=5.500)	N. Narayan Das, N. Kumar, Majit Kaur, Vijay Kumar, Dilbag Singh, "Automated deep transfer learning-based approach for detection of COVID-19 infection in chest X-rays,"
2020		Vijay Kumar , Kaminder Kaur, Avneet Kaur, "Spiral-inspired Spotted Hyena Optimizer and its Application to Constraint Engineering Problems "
2020	Air Quality, Atmosphere & Health, Springer (IF=5.804)	Ashish Girdhar, Himani Kapur, Vijay Kumar, Manjit Kaur, Dilbag Singh, Robertas Damaševičius, "Effect of COVID-19 Outbreak on Urban Health and Environment "
2020	Multimedia Tools and Applications, Springer (IF=2.577)	Sahil Sharma, Vijay Kumar, "Voxel-based 3D occlusion-invariant face recognition using game theory and simulated annealing"
2020	Multimedia Tools and Applications, Springer (IF=2.577)	Ashish Girdhar, Vijay Kumar, "A 2D logistic map and Lorenz-Rossler chaotic system based RGB image encryption approach"
2020	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Vijay Kumar, Dinesh Kumar, "A Systematic Review on Firefly Algorithm: Past, Present, and Future "
2020	IET Biometrics, IET (IF=1.821)	Sahil Sharma, Vijay Kumar, "3D Landmark-based Face Restoration for Recognition using Variational Autoencoder and Triplet Loss "
2020	Multimedia Tools and Applications, Springer (IF=2.577)	Sourabh Katoch, Sumit Singh Chauhan, Vijay Kumar, "A Review on Genetic Algorithm: Past, Present, and Future"
2020	Journal of Molecular Graphics and Modelling, Elsevier (IF=2.942)	Rajesh Kondabala, Vijay Kumar, Amjad Ali, "Design a Synthetic Glucose Receptor using Computational Intelligence Approach"
2020	Journal of Ambient Intelligence and Humanized Computing, Springer (IF=3.662)	Dilbag Singh, Manjit Kaur, Vijay Kumar, "Rapid COVID-19 diagnosis using ensemble deep transfer learning models from chest radiographic images"
2020	Current Pharmaceutical Design, (IF=3.310)	Dilbag Singh, Manjit Kaur, Vijay Kumar, "Drug Synergy Prediction Using Dynamic Mutation based Differential Evolution"
2019	Applied Intelligence, Springer (IF=5.019)	Gaurav Dhiman, Vijay Kumar, "KnRVEA: A Hybrid Evolutionary Algorithm based on Knee Points and Reference Vector Adaptation Strategies for Many-objective Optimization, Vol. 49(7), pp.2434-2460"
2019	Knowledge-Based Systems, Elsevier (IF=8.139)	Gaurav Dhiman, Vijay Kumar, "Emperor Penguin Optimizer: A Bio-inspired Algorithm for Engineering Problems, Vol. 159, pp. 20-50"

2019	Knowledge-Based Systems, Elsevier (IF=8.139)	Gaurav Dhiman, Vijay Kumar, "Seagull Optimization Algorithm: Theory and its Applications for Large Scale Industrial Engineering Problems, Vol. 165, pp. 169-196"
2019	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Manjit Kaur, Vijay Kumar, "A comprehensive review on image encryption techniques"
2019	Archives of Computational Methods in Engineering, Springer (IF=8.171)	Dilbag Singh, Vijay Kumar, "A comprehensive review of computational dehazing techniques"
2019	Signal Processing: Image Communication, Elsevier (IF=3.453)	Dilbag Singh, Vijay Kumar, "Image Dehazing using Moore neighborhood-based Gradient Profile Prior"
2019	Modern Physics Letters A, World Scientific (IF=1.594)	Dinesh Kumar, Vijay Kumar, Rajani, "Automatic Clustering using Quantum based Multi-objective Emperor Penguin Optimizer and its Applications to Image Segmentation, Vol. 34, No. 24, pp. 1950193:1-19"
2019	Applied Intelligence, Springer (IF=5.019)	Dilbag Singh, Vijay Kumar, Manjit Kaur, "Single Image Dehazing using Gradient Channel Prior, Vol. 49, pp. 4276-4293"
2019	Journal of Ambient Intelligence and Humanized Computing, Springer (IF=3.662)	Ashish Gridhar, Vijay Kumar, "A reversible and affine invariant 3D data hiding technique based on difference shifting and logistic map, Vol. 10, pp. 4947-4961"
2019	Science China Information Sciences, Springer (IF=7.275)	Dilbag Singh, Vijay Kumar, "Single image defogging by gain gradient image filter, Vol. 62(7), pp.079101:1-079101:3"
2018	Journal of Electronic Imaging, SPIE (IF=0.945)	Dilbag Singh, Vijay Kumar, "Defogging of road images using gain coefficient based trilateral filter, Vol. 27(1), pp. 1-14"
2018	Modern Physics Letters B, World Scientific (IF=1.948)	Dilbag Singh, Vijay Kumar, "Single image haze removal using integrated dark and bright channel prior, Vol. 32(4), pp. 1-9"
2018	IET Image Processing, IET (IF=2.373)	Ashish Gridhar, Vijay Kumar, "A Comprehensive Survey of 3D Image Steganography Techniques, Vol. 12(1), pp. 1-10"
2018	Multimedia Tools and Applications, Springer (IF=2.577)	Dilbag Singh, Vijay Kumar, "Comprehensive Survey on Haze Removal Techniques, Vol. 77(8), pp. 9595-9620"
2018	Multimedia Tools and Applications, Springer (IF=2.577)	Vijay Kumar, Dinesh Kumar, "A Modified DWT-based Image Steganography Technique, Vol. 77(11), pp. 13279-13308"
2018	Modern Physics Letters B, World Scientific (IF=1.948)	Sahil Sharma, Vijay Kumar, "Performance evaluation of 2D face recognition techniques under image processing attacks, Vol. 32(19), pp. 1-10"
2018	IET Computer Vision, IET (IF=1.950)	Dilbag Singh, Vijay Kumar, "Dehazing of Remote Sensing Images using Fourth-order Partial Differential Equations Based Trilateral Filter, Vol. 12(2), pp. 208-219"
2018	Modern Physics Letters B, World Scientific (IF=1.948)	Dilbag Singh, Vijay Kumar, "Fourier-Mellin moments based intertwining map for image encryption, Vol. 32(9), pp. 1-17"
2018	Electronics Letters, IET (1.343)	Manjit Kaur, Vijay Kumar, "An efficient image encryption method based on improved Lorenz chaotic system, Vol. 54(9), pp. 562-564"
2018	IETE Journal of Research, Taylor and Francis (IF=0.793)	Vijay Kumar, Dinesh Kumar, "Gene Expression Data Clustering using Variance-based Harmony Search Algorithm"
2018	Dilbag Singh, Vijay Kumar	Dehazing of outdoor images using notch based integral guided filter, Vol. 77(20), pp. 27363-27386
2018	Multimedia Tools and Applications, Springer (IF=2.577)	Ashish Gridhar, Vijay Kumar, "A RGB Image Encryption Technique using Lorenz and Rossler Chaotic System on DNA Sequences. Vol. 77(20), pp. 27017-27039"
2018	Imaging Science Journal, Taylor and Francis (IF=2.600)	Manjit Kaur, Vijay Kumar, "Parallel Non-dominated Sorting Genetic Algorithm-II based Image Encryption Technique, Vol. 66(8), pp. 453-462"

2018	IET Image Processing, IET (IF=2.373)	Manjit Kaur, Vijay Kumar, "Color Image Encryption Technique using Differential Evolution in Nonsampled Contourlet Transform Domain, Vol. 12(7), pp.1273 –1283"
2018	International Journal of Bifurcation and Chaos, IET (IF=2.450)	Manjit Kaur, Vijay Kumar, "Beta Chaotic Map based Image Encryption Using Genetic Algorithm, Vol. 28(11), pp. 1850132 (1–26)"
2018	International Journal of Bifurcation and Chaos, IET (IF=2.450)	Manjit Kaur, Vijay Kumar, "Beta Chaotic Map based Image Encryption Using Genetic Algorithm, Vol. 28(11), pp. 1850132 (1–26)"
2018	Arabian Journal for Science and Engineering, Springer (IF=2.807)	Manjit Kaur, Vijay Kumar, "Adaptive Differential Evolution based Lorenz Chaotic System for Image Encryption, Vol. 43(12), pp. 8127-8144"
2018	Computer & Electrical Engineering, Elsevier (IF=4.152)	Dilbag Singh, Vijay Kumar, "A novel dehazing model for remote sensing images, Vol. 69, pp. 14-27"
2018	Neural Computing and Applications, Springer (IF=5.102)	Manjit Kaur, Vijay Kumar, Li Li, "Color Image Encryption Approach based on Memetic Differential EvolutionColor Image Encryption Approach based on Memetic Differential Evolution"
2018	Neural Computing and Applications, Springer (IF=5.102)	Vijay Kumar, Dinesh Kumar, "Automatic Clustering and Feature Selection using Gravitational Search Algorithm and its Application to Microarray Data Analysis"
2018	Modern Physics Letters B, World Scientific (IF=1.948)	Gaurav Dhiman, Vijay Kumar, "Astrophysics inspired multi-objective approach for automatic clustering and feature selection in real-life environment, Vol. 32 (31) , pp. 1-12"
2018	Neural Computing and Applications, Springer (IF=5.102)	Vijay Kumar, Dinesh Kumar, "Binary Whale Optimization Algorithm and its Application to Unit Commitment Problem"
2018	Knowledge-Based Systems, Elsevier (IF=8.139)	Gaurav Dhiman, Vijay Kumar, "Multi-objective Spotted Hyena Optimizer: A Novel Multi-Objective Optimization Algorithm for Engineering Problems, Vol. 150, pp.175-197"
2017	Imaging Science Journal, Taylor and Francis (IF=2.600)	Dilbag Singh, Vijay Kumar, "Dehazing of Remote Sensing Images using Improved Restoration Model based Dark Channel Prior, Vol. 65(5), pp. 282-292"
2017	Journal of Modern Optics, Taylor and Francis (IF=1.293)	Dilbag Singh, Vijay Kumar, "Modified Gain Intervention Filter based Dehazing Technique, Vol. 64(20), pp. 2165-2178"
2017	Advances in Engineering Software, Elsevier (IF=4.255)	Gaurav Dhiman, Vijay Kumar, "Spotted Hyena Optimizer: A Novel Bio-inspired based Metaheuristic Technique for Engineering Applications, Vol. 114, pp. 48-70"
2017	Advances in Engineering Software, Elsevier (IF=4.255)	Vijay Kumar, Dinesh Kumar, "An Astrophysics-inspired Grey Wolf Algorithm for Numerical Optimization and its Application to Engineering Design Problems. Vol. 112, pp. 231-254"
2016	Journal of Engineering Research, Springer (IF=0.620)	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "An Automated Parameter Selection Approach for Simultaneous Clustering and Feature Selection, Vol. 4(2), pp.65-85 "
2015	IETE Journal of Research, Taylor and Francis (IF=1.877)	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Automatic Unsupervised Feature Selection Using Gravitational Search Algorithm, Vol. 61, pp. 22-31"
2014	Cybernetics and Systems, Taylor and Francis (IF=1.859)	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Variance based Harmony Search Algorithm for Unimodal and Multimodal Optimization Problems with Application to Clustering Vol. 45(6), pp. 486-511"
2014	Journal of Computational Science, Elsevier (IF=3.817)	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Parameter Adaptive Harmony Search Algorithm for Unimodal and Multimodal Optimization Problems, Vol. 5, pp. 144-155"

2014	Engineering Applications of Artificial Intelligence, Elsevier (IF=7.802)	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Automatic Cluster Evolution Using Gravitational Search Algorithm and its Application on Image Segmentation. Vol. 29, pp. 93-103"

### Conference Publications :

Year	Conference	Publication
2022	International Conference on Communication and Computational Technologies	Abhinav Lamba, Vijay Kumar, "Comparison between Genetic Algorithm and Grey Wolf Optimiser to Solve Capacitated Vehicle Routing Problem"
2019	International Conference on Sustainable Computing in Science, Technology and Management (SUSCOM), Amity University Rajasthan, Jaipur - India, February 26-28, 2019	Kamalinder Kaur Kaleka, Avneet Kaur, Vijay Kumar, "Design and Development of Soft Computing Toolbox using Metaheuristics"
2019	International Conference on Sustainable Computing in Science, Technology and Management (SUSCOM), Amity University Rajasthan, Jaipur - India, February 26-28, 2019	Rajesh Kondabala, Vijay Kumar, Amjad Ali, "Computational Intelligence Tools to Study Molecular Interactions for Drug Design"
2018	IEEE International Conference on Advances in Computing, Communications and Informatics (ICACCI), 19-22 Sept., 2018	Divya Agarwal, Vijay Kumar, "An Improved Firefly Algorithm for the Vehicle Routing Problem with Time Windows"
2017	IEEE International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICT), 6-7 July, 2017	Rimmi Anand, Vijay Kumar, "Firefly algorithm for reliable protection in distribution networks"
2017	IEEE International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICT), 6-7 July, 2017	Divya Agarwal, Vijay Kumar, Ashish Girdhar, "Lagrangian relaxation for the vehicle routing problem with time windows"
2016	IEEE International Conference on Inventive Computation Technologies (ICICT), Coimbatore, 26-27 Aug., 2016	Seema Gill, Vijay Kumar, "Modified Grey Wolf Algorithm for optimization problems"
2016	International Symposium on Fusion of Science and Technology, New Delhi, 18-22 January 2016	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Improved Grey Wolf Algorithm for Optimization Problems"
2015	International Conference on Future Computational Technologies, Singapore, 29-30 March 2015	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "A Hybrid Approach for Data Clustering using Expectation-Maximization and Parameter Adaptive Harmony Search Algorithm"
2011	International Multi Conference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology, Klawad, Jagadhri, India, 2011	Vijay Kumar, Jitender Kumar Chhabra and Dinesh Kumar, "Skull Stripping from MRI Brain Images Using Morphological Operations: A Study and Implementation"
2010	IEEE International Advance Computing Conference, Patiala, India, 19-21 Feb. 2010	Vijay Kumar, Dinesh Kumar, "Performance evaluation of DWT based image steganography"
2009	International Conference on Intelligent Systems & Networks, Klawad, Jagadhri, India, 2009	Vijay Kumar, Dinesh Kumar, "Digital Watermarking using SVD and Blocked SVD: A Study"

### Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year

Book Chapter	Fast Image Desmogging for Road Safety Using Optimized Dark Channel Prior	CRC Press	Akshay Juneja, Vijay Kumar, Sunil Kumar Singla	XXXX	2022
Book Chapter	Applications of Genetic Algorithms in Healthcare: A Review	Springer	Sahil Sharma, Vijay Kumar	xxxx	2022
Book Chapter	Machine Intelligence-based Approach for Effective Terrorism Monitoring	Taylor & Francis	Riyazveer Singh, Sahil Kumar, Vijay Kumar	9781003006602	2021
Book Chapter	Green communication technology, IOT, VR, AR in smart environment	Taylor & Francis	Riyazveer Singh, Sahil Sharma, Vijay Kumar	9781003121619	2021
Book Chapter	Visual Quality Improvement using Single Image Defogging Technique	Apple Academic Press	Pritam Verma, Vijay Kumar	xxxx	2021
Book Chapter	Skull stripping and Tumor detection using 3 Dimensional U-Net	Elsevier	Isha Sharma, Rahul Gupta, Vijay Kumar	xxxx	2021
Book Chapter	Distracted Driver Detection System using Deep Learning Technique	IGI Global	Varan Singh Rohila, Karan Kumar Barnwal, Vijay Kumar	xxxx	2021
Book Chapter	An efficient image steganography method using multi-objective differential evolution	Elsevier	Manjit Kaur, Vijay Kumar, Dilbag Singh	9780128194386	2020
Book Chapter	Computational Intelligence Tools for Protein Modeling. In: Yadav N., Yadav A., Bansal J., Deep K., Kim J. (eds) Harmony Search and Nature Inspired Optimization Algorithms. Advances in Intelligent Systems and Computing vol. 741	Springer	Rajesh Kondabala , Vijay Kumar	9789811307607	2019
Book Chapter	Spotted Hyena Optimizer for Solving Complex and Non-linear Constrained Engineering Problems. In: Yadav N., Yadav A., Bansal J., Deep K., Kim J. (eds) Harmony Search and Nature Inspired Optimization Algorithms. Advances in Intelligent Systems and Computing vol. 741	Springer	Gaurav Dhiman, Vijay Kumar	9789811307607	2019
Book Chapter	Transfer Learning in 2.5D Face Image for Occlusion Presence and Gender Classification, Chapter 6 in Handbook of Research on Deep Learning Innovations and Trends	IGI Global	Sahil Sharma, Vijay Kumar	9781522578628	2019
Book Chapter	Soft computing based simulated model for enhancing applicability of e-governance, Chapter 17 in The Stances of e-Government	Taylor & Francis	Minakshi Kalra, Dilbag Singh, Vijay Kumar	9780203731451	2018
Book Chapter	Data clustering using Sine-Cosine Algorithm, Chapter 31 in Handbook of Research on Machine Learning Innovations and Trends	IGI Global	Vijay Kumar, Dinesh Kumar	9781522522294	2017



Book Chapter	MRI brain image segmentation using GSA based clustering. Research Developments in Computer Vision and Image Processing: Methodologies and Applications	IGI Global	Vijay Kumar, Jitender Kumar Chhabra, Dinesh Kumar	9781466645585	2014
Book Chapter	Impact of distance measures on the performance of clustering algorithms. In: Mohapatra D., Patnaik S. (eds) Intelligent Computing, Networking, and Informatics Advances in Intelligent Systems and Computing	Springer	Vijay Kumar, Jitender Kumar Chhabra, Dinesh Kumar	9788132216650	2013
Book Chapter	Improving the Performance of Color Image Watermarking Using Contourlet Transform. Advances in Computer Science and Information Technology, LNCS-CCIS, vol 131	Springer	Vijay Kumar, Dinesh Kumar	9783642178566	2011
Book Chapter	Initializing Cluster Center for K-Means Using Biogeography Based Optimization. Advances in Computing, Communication and Control, LNCS-CCIS, vol 125	Springer	Vijay Kumar, Jitender Kumar Chhabra, Dinesh Kumar	9783642184390	2011
Book Chapter	Digital Image Steganography Based on Combination of DWT and DCT. Information and Communication Technology, LNCS-CCIS, vol 101	Springer	Vijay Kumar, Dinesh Kumar	9783642157653	2010

### Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI	Research	Design a Distribution Network for Production Company using Facility Allocation Algorithms	TIET, Patiala	01-04-2016	28-07-2017	7 Lakhs	Completed	None
PI	Research	SmartGlucoBinder: Design and Synthesis of Small Glucose Binder Molecule using Computational Intelligence Approach	SERB	23-03-2017	23-03-2020	27.19 Lakhs	Completed	P.S. Rana, Amjad Ali

Co-PI	Research	DFOG20: Design and Development of an Efficient Defogging Framework for Road Safety	CSIR	19-11-2019	18-11-2022	14.50 Lakhs	Complete d	Sunil Kumar Singla
Co-PI	Research	Tox2020: Toxicity Prediction of pre clinical trial drug using Physicochemi cal Properties and Machine Learning Approaches	SERB	14-07-2016	01-07-2019	25.84 Lakhs	Complete d	Deepak Garg, P.S. Rana

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Rajesh Kondabala	Computational Investigation of Glucose Binding Receptor	Awarded	2022	Dr. Amjad Ali
Rajani	Development of Multiobjective Techniques for Segmentation	Awarded	2021	Dr Dinesh Kumar
Sahil Sharma	Metaheuristic Approaches for Occlusion Invariant 3D Face Recognition Technique	Awarded	2021	None
Dilbag Singh	Design and Development of Visibility Restoration Techniques for Weather Degraded Images	Awarded	2019	None
Manjit Kaur	Development of Efficient Color Image Encryption Techniques using Evolutionary Optimization	Awarded	2019	None
Gaurav Dhiman	Multi-objective Metaheuristic Approaches for Data Clustering in Engineering Application(s)	Awarded	2019	None
Ashish Girdhar	Development of Efficient Image Steganography System for 3D Image Models	Awarded	2019	None

### PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Dev Kant Kumar Chouhan	Detection of Face Mask Using Deep Learning Approaches	Awarded	2022	None
Abhinav Lamba	Metaheuristics Techniques to solve Capacitated Vehicle Routing Problem	Awarded	2022	None
Surya Pratap Saini	Binary Arithmetic Optimization Algorithm for Engineering Problems	Awarded	2022	None
Guneet Singh	Image Steganography Using Generative Adversarial Network	Awarded	2022	None

Ulka Nehra	A Novel Image Watermarking Algorithm using Grey Wolf Optimization	Awarded	2022	None
Rahul Gupta	Prediction of COVID-19 patients from chest X-rays using ensemble deep transfer learning techniques	Awarded	2021	None
Isha Sharma	Multi-objective Tunicate Search Optimization Algorithm	Awarded	2021	None
Nitin Dogra	Drug Synergy using Deep Learning Techniques	Awarded	2021	None
Aniket	Image steganographic model using Generative Adversarial Networks	Awarded	2021	None
Saloni Laddha	COVID-19 Diagnosis and Classification using Deep Learning and GAN Augmentation on Chest X-Rays	Awarded	2021	None
Pritam Verma	Visual Quality Improvement using Single Image Defogging Technique	Awarded	2020	None
Naresh Kumar	Forest Fire Detection Using Machine Learning Techniques	Awarded	2020	None
Lalit Yadav	Development of Wild Animal Detection Technique Using Machine Learning Approaches	Awarded	2020	None
Kamalinder Kaur	Development of Chaotic Metaheuristic Algorithm for Engineering Design Problems	Awarded	2019	Dr P S Rana
Avneet Kaur	Design and development of Binary metaheuristic algorithms for feature selection	Awarded	2019	None
Divya Agarwal	Development of Efficient Approaches for Solving the Vehicle Routing Problem with Time Windows	Awarded	2017	Mr Ashish Gridhar
Rimmi Anand	Design and Development of Reliable Capacitated Facility Location for Distribution Network Design	Awarded	2017	None
Manpreet Singh	Design a Distribution Network for Production Company using Facility Allocation Algorithms	Awarded	2017	None
Seema Gill	Design and Development of Grey Wolf Metaheuristic Technique with Application to Combinatorial Optimization Problem	Awarded	2016	None
Ajay Goel	Digital image steganography technique using discrete wavelet transform	Awarded	2016	None
Divya	Comparison of Cryptographic Algorithms AES and DES	Awarded	2015	None
Pratibha	Performance Evaluation of Skull Stripping Methods and Tools	Awarded	2014	None
Ritu Ganda	Knowledge Discovery from Database using an Integration of Clustering and Association Rule Mining	Awarded	2014	None
Rma Agarwal	Performance Evaluation of Image Segmentation Techniques	Awarded	2013	None
Dipali	Analysis of Integer Factorization Techniques Used in RSA	Awarded	2013	None
Aman Paul	Development of Association Rule Mining for Knowledge Analysis Using Apriori Algorithm	Awarded	2012	None

## Patents :

<b>Name</b>	<b>Reg./Ref. No.</b>	<b>Date of Award/Filling</b>	<b>Organization</b>	<b>Status</b>
Smog Elimination System and Method	201911036469	10-09-2019	Indian Patent Office	Published

### **Admin. Responsibilities :**

<b>Position Held</b>	<b>Organization</b>	<b>From</b>	<b>To</b>
Ph.D Coordinator	Dr. B.R. Ambedkar NIT Jalandhar	16-01-2023	
Department Purchase Committee (Coordinator)	Dr. B.R. Ambedkar NIT Jalandhar	16-01-2023	
Infrastructure and Lab Development (Coordinator)	Dr. B.R. Ambedkar NIT Jalandhar	16-01-2023	

### **Award and Honours :**

<b>Title</b>	<b>Activity</b>	<b>Given by</b>	<b>Year</b>
Highly Cited Researcher	Contribution towards research community	Web of Science	2022
Young Teacher award	Contribution towards research community	Mody University, Rajasthan	2018