PUBLICATIONS

★ PATENTS/COPYRIGHTS

- **P. Singh** and G. Dhiman. Development of Tool and Technique for High-Resolution Satellite Image Data Compression using Fuzzy Set Theory, *Indian Copyright Reg. No. 12105/2019*.

★ BOOKS

BK 1-2023: P. Singh. Biomedical Image Analysis: Special Applications in MRIs and CT Scans. Publisher: Springer International Publishing, In Press, Year: 2023.

BK 2-2015: P. Singh. Applications of Soft Computing in Time Series Forecasting: Simulation and Modeling Techniques. Publisher: Springer International Publishing, ISBN: 978-3-319-26292-5, Year: 2015.

★ INTERNATIONAL JOURNALS (SCI)

SCI 1-2024: P. Singh, Bhavna Saini, and Y.-P. Huang, AECA: An ambiguous-entropy clustering algorithm for the analysis of resting-state fMRISs of human brain and their functional connections. *Modern Physics Letters B (World Scientific)*, XX (X), XX–XX, 2024. [IF = 1.9 (2022)]

SCI 2-2024: P. Singh and Y.-P. Huang, AKDC: Ambiguous Kernel Distance Clustering Algorithm for COVID-19 CT Scans Analysis. *IEEE Transactions on Systems, Man and Cybernetics: Systems (IEEE)*, XX (X), XX–XX, 2024. [IF = 8.7 (2022)]

SCI 3-2024: P. Singh, From Ambiguous Sets to Single-Valued Ambiguous Complex Numbers: Applications in Mandelbrot Set Generation and Vector Directions. *Modern Physics Letters B (World Scientific)*, XX (X), XX–XX, 2024. [IF = 1.9 (2022)]

SCI 4-2024: Nihalani and others, Long Short-Term Memory (LSTM) model for Indian sign language recognition. *Journal of Intelligent & Fuzzy Systems (IOS Press)*, 46 (4), 11185–11203, 2024. [IF = 2 (2023)]

SCI 5-2024: P. Singh and Y.-P. Huang, An ambiguous edge detection method for computed tomography scans of coronavirus disease 2019 cases. *IEEE Transactions on Systems, Man and Cybernetics: Systems (IEEE)*, 54 (1), 352–364, 2024. [IF = 8.7 (2022)]

SCI 6-2023: P. Singh and Y.-P. Huang, A four-valued ambiguous logic: Application in designing ambiguous inference system for control systems. *International Journal of Fuzzy Systems (Springer)*, 25 (8), 2921–2938, 2023. [IF = 4.085 (2021)]

SCI 7-2023: P. Singh and Y.-P. Huang, Membership functions, set-theoretic operations, distance measurement methods based on ambiguous set theory: A solution to a decision-making problem in selecting the appropriate colleges. *International Journal of Fuzzy Systems (Springer)*, 25, 1311–1326, 2023. [IF = 4.085 (2021)]

SCI 8-2023: P. Singh and M. K. Muchahari, Solving multi-objective optimization problem of convolutional neural network using fast forward quantum optimization algorithm: Application in digital image classification. *Advances in Engineering Software (Elsevier)*, 176, 103370, 2023. [IF = 4.255 (2021)]

SCI 9-2022: P. Singh, Marcin Wątorek, Anna Ceglarek, Magdalena Fąfrowicz, Koryna Lewandowska, Tadeusz Marek, Barbara Sikora-Wachowicz and Paweł Oświęcimka, Analysis of fMRI signals from working memory tasks and resting-state of brain: Neutrosophic-Entropy based clustering algorithm. *International Journal of Neural Systems (World Scientific)*, 32(4), 2250012, 2022. [IF = 6.325 (2020)]

SCI 10-2021: P. Singh and S. S. Bose, Ambiguous D-means fusion clustering algorithm based on ambiguous set theory: Special application in clustering of CT scan images of COVID-19. *Knowledge-Based Systems (Elsevier)*, 231, 107432, 2021. [IF = 8.038 (2020)]

SCI 11-2021: P. Singh and S. S. Bose, A Quantum-Clustering Optimization Method for COVID-19 CT Scan Image Segmentation. *Expert Systems With Applications (Elsevier)*, 185, 115637, 2021. [IF = 6.954 (2020)]

SCI 12-2021: P. Singh, FQTSFM: A fuzzy-quantum time series forecasting model. *Information Sciences (Elsevier)*, 556, 57–79, 2021. [IF = 6.795 (2020)]

SCI 13-2021: P. Singh, A Type-2 Neutrosophic-Entropy-Fusion Based Multiple Thresholding Method for the Brain Tumor Tissue Structures Segmentation. *Applied Soft Computing (Elsevier)*, 103, 107119, 2021. [IF = 6.725 (2020)]

SCI 14-2020: P. Singh and Y-P Huang. A Four-Way Decision-Making Approach using Interval-Valued Fuzzy Sets, Rough Set and Granular Computing: A New Approach in Data Classification and Decision-Making. *Granular Computing (Springer)*, 5, 397–409, 2020. [IF = 5.5 (2022)]

SCI 15-2020: Y.-P. Huang, **P. Singh**, Wen-Lin Kuo and Hung-Chi Chu. A Type-2 Fuzzy Clustering and Quantum Optimization Approach for Crops Image Segmentation. *International Journal of Fuzzy Systems (Springer)*, 23, 615–629, 2020. [IF = 4.406 (2019)]

SCI 16-2020: P. Singh. A neutrosophic-entropy based adaptive thresholding segmentation algorithm (NEATSA): A special application in MR images of Parkinson's disease (PD). *Artificial Intelligence in Medicine (Elsevier)*, 104, 101838, 2020. [IF = 3.574 (2018)]

SCI 17-2020: P. Singh, Y.-P. Huang and Shu-I Wu. An Intuitionistic Fuzzy Set Approach for Multi-Attribute Information Classification and Decision-Making. *International Journal of Fuzzy Systems (Springer)*, 22(5), 1506–1520, 2020. [IF = 4.406 (2019)]

SCI 18-2020: Y.-P. Huang, **P. Singh** and Hung-Chou Kuo. A hybrid fuzzy clustering approach for the recognition and visualization of MRI images of Parkinson's disease. *IEEE ACCESS (IEEE)*, 8(1), 25041–25051, 2020. [IF = 4.098 (2018)]

SCI 19-2020: P. Singh. A Novel Hybrid Time Series Forecasting Model Based on Neutrosophic-PSO Approach. *International Journal of Machine Learning and Cybernetics (Springer)*, 11, 1643–1658, 2020. [IF = 3.844 (2018)]

SCI 20-2020: P. Singh. A neutrosophic-entropy based clustering algorithm (NEBCA) with HSV color system: Application in segmentation and visualization of Parkinson's disease (PD) MR images. *Computer Methods and Programs in Biomedicine (Elsevier)*, 189, 105317, 2020. [IF = 3.424 (2018)]

SCI 21-2019: P. Singh and Y.-P. Huang. A High-Order Neutrosophic-Neuro-Gradient Descent Algorithm Based Expert System for Time Series Forecasting. *International Journal of Fuzzy System (Springer)*, 21(7), 2245–2257, 2019. [IF = 4.406 (2019)]

SCI 22-2019: P. Singh and Y.-P. Huang. A New Hybrid Time Series Forecasting Model Based on the Neutrosophic Set and Quantum Optimization. *Computers in Industry (Elsevier)*, 111, 121–139, 2019. [IF = 4.769 (2018)]

SCI 23-2019: P. Singh, G. Dhiman, S. Guo, R. Maini, H. Kaur, A. Kaur, H. Kaur, J. Singh and N. Singh. A hybrid fuzzy quantum time series and linear programming model:

Special application on TAIEX index dataset. *Modern Physics Letters A (World Scientific)*, 34(25), 1950201, 2019. [IF = 1.367 (2018)]

SCI 24-2019: G. Dhiman, **P. Singh**, H. Kaur and R. Maini. DHIMAN: A Novel Algorithm for Economic Dispatch Problem based on Optimization Method using Monte-Carlo Simulation and Astrophysics Concepts. *Modern Physics Letters A (World Scientific)*, 34(4), 1950032–1950046, 2019. [IF = 1.308 (2017)]

SCI 25-2018: **P. Singh**, G. Dhiman and A. Kaur. A Quantum Approach for Time Series Data Forecasting Based on Graph and Schrödinger Equations Methods. *Modern Physics Letters A (World Scientific)*, 33(35), 1850208–1850231, 2018. [IF = 1.308 (2017)]

SCI 26-2018: **P. Singh** and G. Dhiman. Uncertainty Representation using Fuzzy-Entropy Approach: Special Application in Remotely Sensed High-Resolution Satellite Images (RSHRSIs). *Applied Soft Computing (Elsevier)*, 72, 121–139, 2018. [IF = 3.541 (2018)]

SCI 27-2018: **P. Singh**, K. Rabadiya and G. Dhiman. Four-Way Decision-Making System for the Indian Summer Monsoon Rainfall. *Modern Physics Letters B (World Scientific)*, 32(25), 1850304–1850326, 2018. [IF = 0.687 (2017)]

SCI 28-2018: **P. Singh** and G. Dhiman. A hybrid fuzzy time series forecasting model based on granular computing and bio-inspired optimization approaches. *Journal of Computational Science (Elsevier)*, 27, 370–385, 2018. [IF = 1.748 (2018)]

SCI 29-2017: **P. Singh**. Indian Summer Monsoon Rainfall (ISMR) Forecasting using Time Series Data: A Fuzzy-Entropy-Neuro Based Expert System. *Geoscience Frontiers (Elsevier)*, 9, 1243–1257, 2017. [IF = 4.256 (2017)]

SCI 30-2016: **P. Singh**. High-order fuzzy-neuro-entropy integration based expert system for time series forecasting. *International Journal of Neural Computing and Applications (Springer)*, 28(12), 3851–3868, 2016. [IF = 1.569 (2014)]

SCI 31-2016: **P. Singh**. Rainfall and Financial Forecasting using Fuzzy Time Series and Neural Networks Based Model. *International Journal of Machine Learning and Cybernetics (Springer)*, 9(3), 491–506, 2016. [IF = 1.11 (2015)]

SCI 32-2015: **P. Singh**. A brief review of modeling approaches based on fuzzy time series. *International Journal of Machine Learning and Cybernetics (Springer)*, 8(2), 397–420, 2015. [IF = 1.11 (2015)]

SCI 33-2014: **P. Singh** and B. Borah. Forecasting stock index price based on M-factors fuzzy time series and particle swarm optimization. *International Journal of Approximate Reasoning (Elsevier)*, 55, 812–833, 2014. [IF = 1.729 (2013)]

SCI 34-2013: **P. Singh** and B. Borah. High-order fuzzy-neuro expert system for daily temperature forecasting. *Knowledge-Based Systems (Elsevier)*, 46, 12–21, 2013. [IF = 4.104 (2013)]

SCI 35-2013: **P. Singh** and B. Borah. An efficient time series forecasting model based on fuzzy time series. *Engineering Applications of Artificial Intelligence (Elsevier)*, 26, 2443–2457, 2013. [IF = 1.625 (2013)]

SCI 36-2013: **P. Singh** and B. Borah. Indian summer monsoon rainfall prediction using artificial neural network. *Stochastic Environmental Research and Risk Assessment (Springer)*, 27(7), 1585–1599, 2013. [IF = 1.961(2013)]

SCI 37-2012: **P. Singh** and B. Borah. An effective neural network and fuzzy time series-based hybridized model to handle forecasting problems of two factors. *Knowledge and Information Systems (Springer)*, 38(3), 669–690, 2012. [IF = 2.225(2012)]

⋆ INTERNATIONAL JOURNALS (SCOPUS)

Scopus 1-2023: **P. Singh**, An investigation of ambiguous sets and their application to decision-making from partial order to lattice ambiguous sets. *Decision Analytics Journal (Elsevier)*, 08, 100286, 2023.

Scopus 2-2023: **P. Singh**, A general model of ambiguous sets to a single-valued ambiguous numberswith aggregation operators. *Decision Analytics Journal (Elsevier)*, 08, 100260, 2023.

Scopus 3-2023: **P. Singh**, Ambiguous set theory: A new approach to deal with unconsciousness and ambiguousness of human perception. *Journal of Neutrosophic and Fuzzy Systems (American Scientific Publishing Group)*, 05(01), 52–58, 2023.

Scopus 4-2022: **P. Singh**, Marcin Wątorek, Anna Ceglarek, Magdalena Fąfrowicz, and Paweł Oświęcimka, Analysis of fMRI Time Series: Neutrosophic-Entropy Based Clustering Algorithm. *Journal of Advances in Information Technology*, 13(3), 224–229, 2022.

⋆ BOOK CHAPTERS

BC 1-2017: **P. Singh**. Emerging Research on Applied Fuzzy Sets and Intuitionistic Fuzzy Matrices, chapter *An Efficient Method for Forecasting using Fuzzy Time Series*, pp.287–304, IGI Global (USA), 2017.

BC 2-2015: **P. Singh**. Computational Intelligence for Big Data Analysis, volume 19, chapter *Big Data Time Series Forecasting Model: A Fuzzy-Neuro Hybridize Approach*, pp.55–71, Springer-Verlag/Heidelberg, 2015.

BC 3-2015: **P. Singh**. Hybrid Soft Computing Approaches: Research and Applications, chapter *Neuro-Fuzzy Hybridized Model for Seasonal Rainfall Forecasting: A Case Study in Stock Index Forecasting*, pp.361–385, Springer-Verlag/Heidelberg, 2015.

BC 4-2023: S.K. Singh, M. Borah and **P. Singh**. Introduction to Computer and Applied Mathematics, chapter *Comparative study of Genetic algorithms, Modified-PSO, and Modified-Simulated Annealing on some Difficult Benchmark Test Functions*, pp.116–124, RM Research International Pvt. Ltd. (Singapore), 2023.

⋆ INTERNATIONAL CONFERENCES

IC 1-2024: **P. Singh**. Ambiguous sets and various distance measurements. *Proc. of 6th International Conference on Soft Computing and its Engineering Applications (icSoftComp2024)*, Bangkok, Thailand, pp. XX–XX, Dec. 10–12, 2024.

IC 2-2021: **P. Singh**, M. Wątorek, A. Ceglarek, M. Fąfrowicz and P. Oświęcimka. Analysis of fMRI Time Series: Neutrosophic-Entropy based Clustering Algorithm. *Proc. of 8th Intl. Conference on Soft Computing and Machine Intelligence (ISCMI 2021)*, Cairo, Egypt, pp. XX–XX, Nov. 26–27, 2021.

IC 3-2020: **P. Singh**, Y.-P. Huang, W.-J. Chu and J.-H. Lee. A Fuzzy-Entropy and Image Fusion Based Multiple Thresholding Method for the Brain Tumor Segmentation. *Proc. of IEEE Int. Conf. on Systems, Man, and Cybernetics (SMC 2020)*, Toronto, Canada, pp. 2446–2451, Oct. 11–14, 2020.

IC 4-2019: **P. Singh**, Y.-P. Huang and T.-T. Lee. A Novel Ambiguous Set Theory to Represent Uncertainty and its Application to Brain MR Image Segmentation. *Proc. of IEEE Int. Conf. on Systems, Man, and Cybernetics (SMC 2019)*, Bari, Italy, pp.2460–2465, Oct. 06–09, 2019.

IC 5-2019: P. Singh, Y.-P. Huang and T.-T. Lee. A Method for High-Resolution Satellite Image Compression using Type-1 and Type-2 Fuzzy Sets. *Proc. of IEEE Int. Conf. on System and Engineering (ICSSE 2019)*, Dong Hoi City, Quang Binh, Vietnam, pp.103–108, July 19–21, 2019.

IC 6-2018: P. Singh and K. Rabadiya. High-Resolution Satellite Image Compression using Uncertain Color Space Based Method. *Proc. of 24th Annual Int. Conf. on Advanced Computing and Communications (ADCOM 2018)*, International Institute of Information Technology (IIIT), Bangalore, pp.XX, Sep. 21–23, 2018.

IC 7-2018: P. Singh and K. Rabadiya. Information Classification, Visualization and Decision-Making: A Neutrosophic Set Theory Based Approach. *Proc. of 2018 IEEE Int. Conf. on Systems, Man, and Cybernetics (SMC 2018)*, Miyazaki, Japan, pp.409–414, Oct. 7–11, 2018.

IC 8-2017: P. Singh and K. Rabadiya. Uncertain Information Classification: A Four-Way Decision Making Approach. *Proc. of 9th Int. Conf. on Advances in Pattern Recognition (ICAPR)*, ISI, Bengluru, India, pp.1–9, Dec. 27–30, 2017. [Acceptance Rate: 33%]

IC 9-2017: P. Singh and G. Dhiman. A Fuzzy-LP Approach in Time Series Forecasting. *Proc. of 7th Int. Conf. on Pattern Recognition and Machine Intelligence (PReMI 2017)*, ISI Kolkata, India, pp.243–253, Dec. 5–8, 2017. [Acceptance Rate: 33%]

IC 10-2012: P. Singh and B. Borah. Prediction of all India summer monsoon rainfall using an artificial neural network. *Proc. of Opportunities and Challenges in Monsoon Prediction in a Changing Climate (OCHAMP' 2012)*, IITM, Pune, India, Feb. 21–25, 2012.

⋆ NATIONAL CONFERENCES

NC 1-2011: P. Singh and B. Borah. An Efficient Method For Forecasting Using Fuzzy Time Series. *NCTMI' 11*, Tezpur University, Assam, India, pp.67–75, 2011

NC 2-2011: P. Singh and B. Borah. A Multi-Purpose Forecasting Model Based On Fuzzy Time-Series. *IDRBT Colloquium, IDRBT*, Hyderabad, India, 2011