

Manoj Kumar Singh

Associate Professor

Department of Computer Science

Institute of Science

Banaras Hindu University

Varanasi-221005

Uttar Pradesh, India.

Email: manoj.dstcims@bhu.ac.in

Qualifications:

- Ph.D. (Gwangju Institute of Science and Technology, South Korea) in 2008
- M.Sc. (University of Allahabad, Allahabad, India) in 1998
- B.Sc. (Ewing Christian College, Allahabad, India) in 1994.

Area of Specialization:

Statistical Signal Processing, Digital Signal Processing, Image Processing, Computer vision, Brain analytics, Compressive Sensing, Beam forming, Inverse Problem, Radiometer and Radar Signal Processing, Microwave and Millimeter wave Radiometry and its Biological Application, Imaging Instrument Development

Research Projects

Title: System Modeling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor.

Agency: DST Government of India and Ministry of Education, Science and Technology, South Korea.

Period: June 2011 to June 2014.

Amount: INR 47,00,000/-

Major Publications:

1. Dharmraj Singh, Manoj Kumar Singh, Tarkeshwar Singh, Rajkishore Prasad, "Genetic Algorithm for Solving Multiple Travelling Salesmen Problem using a New Crossover and Population Generation," *Computacion Sistemas*, ISSN : 2007-9737 (**Accepted**)(**SCIE**)
2. Siddharth Singh, Vivek Singh Rathore, Rajiv Singh, Manoj Kumar Singh, "Hybrid semi-blind image watermarking in redundant wavelet domain," *Multimedia Tools and Applications*, March 2017, pp. 1-24, doi:10.1007/s11042-017-4570-8, ISSN: 1380-7501 (Print) 1573-7721 (Online) (**SCI, IF** : 1.331)
3. Pranav Waila, Vivek Kumar Singh, Manoj Kumar Singh, "A Scientometric Analysis of Research in Recommender Systems," *Journal of Scientometric Research*, Vol. 5, No. 1, 2016. ISSN: 2321-6654(Print), 2320-0059(Online).
4. Won-Gyum Kim, Nam-Won Moon, **Manoj Kumar Singh**, Hwang-Kyeom Kim and Yong-Hoon Kim, "Characteristic analysis of aspheric quasi-optical lens antenna in millimeter-wave radiometer imaging system," *Applied Optics*, Vol. 52, No. 6, pp. 1122-1131, 2013. (**SCI, IF**: 1.784), ISSN : 1559-128x (Print), 2155-3165 (Online)
5. D.K. Patel, T. Som, **M.K. Singh**, "Handwritten Character Recognition Using Multiresolution Technique and Euclidean Distance Metric," *Journal of Signal and Information Processing (JSIP)*, vol. 3, pp. 208-214, 2012. ISSN: 2159-4465.
6. D.K. Patel, T. Som, **M.K. Singh**, "Improving the Recognition of Handwritten Characters using Neural Network through Multi resolution Technique and Euclidean Distance Metric," *International Journal of Advanced Research in Computer Science*. vol. 45, no. 6, pp. 38-50, 2012, ISSN 0976 – 5697.

7. Vivek Kumar Singh, Tanveer J. Siddiqui, **Manoj Kumar Singh**, "Evaluating Hard and soft Flat-Clustering Algorithms for Text Documents" Springer's Series of Advances in Intelligent Systems and Computing, vol. 179, pp. 63-76, 2012. **ISBN:** 2194-5357. **DOI:** 10.1007/978-3-642-31603-6.
8. **Manoj Kumar Singh**, Won-Gyum Kim, Uma Shanker Tiwary, Seok-Jae Lee, Dong-Rae Cho, Yong-Hoon Kim, "Optical performance analysis using a point spread function and modulation transfer function for W-band PMMW imaging system based on quasi optics focused array of dielectric rod waveguide antenna," Progress in Electromagnetic Research B, vol. 23, pp. 273 – 291, 2010, ISSN: 19376472, (**SCI, Impact Factor:** 3.47)
9. **Manoj Kumar Singh**, U.S. Tiwary, Yong-Hoon Kim, Rajkishore Prasad, Tanveer Siddique, "Adaptive Acceleration of MAP with Entropy Prior and Flux Conservation for Image Deblurring," Proceeding on Intelligent Human Computer Interaction, Springer, ISBN: 978-81-8489-203-1, pp. 212-220, 2009.
10. **Manoj Kumar Singh**, Uma Shanker Tiwary, and Yong-Hoon Kim, "An Adaptively Accelerated Lucy-Richardson Method for Image Deblurring," *EURASIP Journal on Advances in Signal Processing*, vol. 2008, Article ID 365021, 10 pages, 2008. doi:10.1155/2008/365021. (**SCI, Impact Factor:** 1.055), **ISSN :** 1687-6180
11. **Manoj Kumar Singh**, U.S. Tiwary, Yong-Hoon Kim, "An Adaptively Accelerated Bayesian Deblurring Method with Entropy Prior," *EURASIP Journal on Advances in Signal Processing*, vol. 2008, Article ID 674038, 13 pages, 2008. doi: 10.1155/2008/674038. (**SCI, Impact Factor:** 1.055). **ISSN :** 1687-6180

Conference Proceedings:

1. Dharm Raj Singh, **Manoj Kumar Singh**, Tarkeshwar Singh, "Multiple Traveling Salesman Problem using novel Crossover and Group Theory," International Conference on Computing, Communication & Automation (ICCCA) 2017, pp. 369-373, May 05 -06, 2017, Galgotias University, ISBN :978-1-5090-6471-7, IEEE USA.
2. Dharm Raj Singh,, **Manoj Kumar Singh**, and Tarkeshwar Singh, "A Hybrid Algorithm with Modified Inver-Over Operator and Ant Colony Optimization for Traveling Salesman Problem," *Advances in Computing, Control and Communication Technology*, pp. 29–37, 2016, In *Tewari R.R. (Ed.), Rai A.K. (Ed.) ISBN: 978-93-85926-20-4 • Allied Publishers, New Delhi, India*
3. Singh D.R., **Singh M.K.**, Singh T. (2015), "A Hybrid Algorithm with Modified Inver-Over Operator and Genetic Algorithm Search for Traveling Salesman Problem," In: Choudhary R., Mandal J., Auluck N., Nagarajaram H. (eds) *Advanced Computing and Communication Technologies. Advances in Intelligent Systems and Computing*, vol 452, pp 141-150, 2015, ISBN: 978-981-10-1021-7, Springer, Singapore.
4. Dharm Raj Singh, **Manoj Kumar Singh**, Tarkeshwar Singh, "A Hybrid Heuristic Algorithm for the Euclidean Traveling Salesman Problem," *Proceeding of IEEE Conference on Computing, Communication and Automation 2015 (ICCCA 2015)*, ISBN: 978-1-4799-8889-1, pp. 773 – 778, May 15 – 16, 2015, Greater Noida, INDIA.
5. Sunil Kumar, Manish Kumar Pandey, Abhigyan Nath, Karthikeyan Subbiah, **Manoj Kumar Singh**, "Comparative Study on Machine Learning Techniques in Predicting the QoS – values for Web-Services Recomenadtion," *Proceeding of IEEE Conference on Computing, Communication and Automation 2015 (ICCCA 2015)*, ISBN: 978-1-4799-8889-1, pp. 161 – 167, May 15 – 16, 2015, Greater Noida, INDIA.
6. **Manoj Kumar Singh**, Akhilesh Gupta, Salony Permanand, Umesh Singh, O.P. Singh, Yong Hoon Kim, Ashish Kumar Singh, "System Modeling and Signal Processing of Microwave Doppler Radar for Cardiopulmonary Sensing," *Proceeding of IEEE 2015 International Conference on Signal Processing and Communication (ICSC)*, ISBN: 978-1-4799-6760-5, pp. 227 -232, March 16 -18, 2015, Noida, INDIA .

7. D.K. Patel, T. Som, **M. K. Singh**, "Multiresolution technique to handwritten English character recognition using learning rule and Euclidean distance metric," 2013 International Conference on Signal Processing and Communication (ICSC), ISBN: 978-1-4799-1605-4, pp. 207 -212, Dec. 12 - 14, 2013, Noida, INDIA .
8. Pranav Waila, V.K. Singh, **M.K. Singh**, "Blog Text Analysis Using Topic Modeling, Name Entity Recognition and Sentiment Classifier Comine ," Proceeding of the IEEE International Conference on Computational Intelligence and Computing Research (ICIC), ISSN: 978-1-4799-2432-5, pp. 1166 – 1171, Dec. 26 -28, 2013, Madurai, INDIA.
9. P. Waila, Marisha, V.K. Singh, **M.K. Singh**, "Evaluating Machine Learning and Unsupervised Semantic Orientation Approaches for Sentiment Analysis of Textual Reviews," Proceeding of the IEEE International Conference on Computational Intelligence and Computing Research (ICIC), ISSN: 978-1-4673-1342-1 , pp. 458 – 463, Dec. 18 -20, 2012, Coimbatore, INDIA .
10. Pranav Waila, Vivek Kumar Singh, **Manoj Kumar Singh**, "Evaluating Blog Data on Women Issues Using Bayesian Sentiment Analysis", ISBA Regional Meeting and International Workshop/Conference on Bayesian Theory and Applications (IWCBT), January 6-10, 2013, Banaras Hindu University (BHU), Varanasi-221 005.
11. **Manoj Kumar Singh**, Yong Hoon Kim, Umesh Singh, Uma Shanker Tiwary, Tanveer J. Siddiqui, "Feasibility of Heart Beat and Respiration Measurement Using Motion Detector Based on Doppler Radar," National Seminar On Impact of Physics on Biological Sciences, **August 26, 2010**, Department of Physics, Ewing Christian College (ECC), Allahabad India, ISBN : 978-81-905712-9-6, pp. 35-40, 2011. (*received best paper award*).
12. Nam-Won Moon, **Manoj Kumar Singh**, Yong-Hoon Kim, "Passive Range Measurement and Discrepancy Effects of Distance for Stereo Scanning W-band Radiometer," Proceeding of the 11th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment (MicroRad), Washington DC, USA. (*received 2nd prize*). ISSN: 978-1-4244-8120-0, pp. 217-220, March 1-4, 2010.
13. **Manoj Kumar Singh**, Sung-Hyun Kim, Yong-Hoon Kim, U.S. Tiwary, "Passive Millimeter-wave Image Restoration using Adaptively Accelerated Maximum Entropy Method," Proceeding of International Symposium of Remote Sensing (ISRS), ISSN: 1226-9743, pp. 414 – 417, 2007.
14. **Manoj Kumar Singh**, Sung-Hyun Kim, Chunsik Chae, Ho-Jin Lee, Jong-Oh Park, Eun-Sup Sim, De-Hai Zhang, Jing-Shan Jiang, Yong-Hoon Kim, "Calibration Issues of Spaceborne Microwave Radiometer DREAM on STSAT-II," Proceeding of ISRS, ISSN 1226 - 9743, Volume 1, pp 398-401, 2006.
15. Sung-Hyun Kim, Ho-Jin Lee, Seok-Hun Yun, Jin-Mi Jeong, Chun-Sik Chae, **Manoj Kumar Singh**, Jong-Oh Park, Eun-Sup Sim, De-Hai Zhang, Jing-Shan Jiang, and Yong-Hoon Kim, "Design and Performance of Dual- channel Radiometers for Earth and Atmosphere Monitoring (DREAM) Protoflight Model," Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGRASS), Vol. 5, pp. 3216 – 3219, 2006. ISBN: 0-7803-9510-7.
16. **Manoj Kumar Singh**, Hyuk Park, Sung-Hyun Kim, Yong-Hoon Kim, U.S. Tiwary, "Passive Millimeter-wave Image Restoration using Maximum Entropy Method with Flux Conservation," Proceeding of the XXVIIIth International union of Radio Science (URSI) General Assembly, 23-29 October 2005, New Delhi.
17. **Manoj Kumar Singh**, Hyuk Park, Sung-Hyun Kim, U.S.Tiwary, Yong-Hoon Kim, "Linear and Nonlinear Methods for Passive Millimeter-wave Image Deblurring," Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGRASS), Vol. 5, pp. 3685-3688, 2005, ISBN: 0-7803-9050-4
18. Hyuk Park, **Manoj Kumar Singh**, Sung-Hyun Kim, Ho-Jin Lee, Yong-Hoon Kim, "Blind Image Restoration for MMW Radiometer Based on Wavelet Techniques," Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGRASS), Vol. 6, pp. 4279-4282, 2005, ISBN: 0-7803-9050-4

19. Hyuk Park, Sung-Hyun Kim, **Manoj Kumar Singh**, Jun-Ho Choi, Ho-Jin Lee, Yong-Hoon Kim, "Performance analysis of wavelet based restoration for PMMW images," Proceedings of the SPIE -- volume 5789, pp. 157 – 166, 2005, **ISBN**: 9780819457745.
20. Hyuk Park, **Manoj Kumar Singh**, Yong-Hoon Kim, "Imaging for Interferometric Radiometer Based on Capon Beamforming Algorithm," International Conference on Intelligent Signal Processing and Robotics, IIT Allahabad, 20-23 February 2004.
21. **Manoj Kumar Singh**, Hyuk Park, U. S. Tiwary, "Segmentation of High Blurred Millimeter-wave Radiometer Image using Class-uncertainty and Pixel Homogeneity-index," International Conference on Intelligent Signal Processing and Robotics, IIT Allahabad, 20-23 February 2004.
22. **Manoj Kumar Singh**, Tiwary U.S., Kim Yong Hoon, "Segmentation of Millimeter-wave Radiometer Image via Class- uncertainty and Region-homogeneity," Proceeding of the ACRS & ISRS, **ISSN**: 1226-9743, vol.1, pp. 9-11, 2003.
23. Tiwary Uma Shanker, Singh Sabhapati, **Manoj Kumar Singh**, "Fuzzy Clustering And Layered Neural Network For Face Recognition," Proceeding of the International Conference on Multimedia Processing and Systems(ICMPS 2000), pp. 13-15 August 2000, IIT Madras, India.
24. **Manoj Kumar Singh**, Tiwary Umashanker, "Soft Computing Techniques and Its Application to Face Recognition," Proceeding of the Fifth Conference of the International Academy of Physical Sciences, Allahabad, 1999.

Book Chapter:

1. D. K. Patel, T. Som, M.K. Singh, "Wavelet-Based Recognition of Handwritten Characters Using Artificial Neural Network", Handbook of Research on Generalized and Hybrid Set Structures and Applications for Soft Computing, IGI Global, Chapter 22, pp. 473-489, **ISBN**: 9781466697980, **ISSN**: 2327-0411, 2016.

Awards/Fellowships:

- Korea State and Engineering Foundation (KOSEF) fellowship from 2003 – 2006.
- Brain Korea -21 (BK-21) Post Doctoral Fellowship 2009.

Additional Information:

- Member of IEEE Signal Processing Society (Membership No.: 80655670)
- Member of Executive Committee of IEEE Signal Processing / Computer Joint Chapter, U.P Section.