
Dr. Manoj Kumar Singh

Department of Computer Science,
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Teaching and Research Interests

Statistical Signal Processing, Digital Signal Processing, Image Processing, Compressive Sensing, Inverse Problem, EEG Signal Processing, Affective Computing, Neuro-Cognitive framework for Emotion, Imaging Instrument Development, Information Retrieval, Natural Language Processing.

Education

Ph.D. Engineering (2003 – 2008)

Research Area: Passive Millimeter-Wave Imaging, Image Restoration, Radiometry, Inverse Problem.

Thesis: A Study of Passive Millimeter – Wave (PMMW) Imaging System and Algorithm for Forming High Quality Image.

School of Information and Mechatronics,
Gwangju Institute of Science and Technology (GIST), 1, Oryong-Dong, Buk-Gu,
South Korea.

M.Sc. Computer Science* (1996 – 1998)

Grade : First Division

Thesis: Simulation of Memory Allocation Policies

J. K. Institute of Applied Physics and Technology,
Allahabad University, Allahabad, INDIA.

** Session was 1995 – 1997, Due to late session I got admission in 1996*

B.Sc. Mathematics, Physics, Chemistry (1991 – 1994)

Grade: Second Division

Ewing Christian College,
Allahabad University, Allahabad, INDIA.

Intermediate Science with Math (1989 – 1991)

Grade: First division

U.P. Board

High School With Science (1986 – 1989)

Grade: First division

U.P. Board

Employment: Research / Teaching Experience

- **Associate Professor (September 2017 – Present)**
Department of Computer Science, Banaras Hindu University (BHU), Varanasi.

- **Assistant Professor (July 2010– Oct. 2017)**
DST- Centre for Interdisciplinary Mathematical Sciences (DST-CIMS),
Banaras Hindu University (BHU), Varanasi.

Teaching at UG, PG and Ph.D.:

- I delivered lecture to **M.Sc.**, and **MCA** students on simulation and modeling.
- I deliver the lecture to **Ph.D.** students on statistical method for data analysis and statistical simulation.

Research and Development:

- Organize weekly seminar on Inverse Problems and Application to Imaging and Biomedical Signal Processing at DST-CIMS.
- Executing and managing the Indo-Korea collaborative research project funded through DST government of India and Ministry of Education, Science and Technology, South Korea.

- **BK-21 Post Doctoral Fellow (November 2009 – June 2010)**
Department of Mechatronics, Gwangju Institute of Science and Technology, South Korea.

- Microwave for biomedical application (Heart monitoring and Breast Cancer Detection).
- *Design of millimeter-wave Imaging System and Algorithm for Image Improvement:*

Multi-channel W-band Millimeter wave Imaging Radiometer Equipment was modeled for getting video at 1 Hz frame rate. Mathematical model for possible degradation (from optics to data acquisition) are developed and it is verified through simulation and measurement. Using this degradation model we developed image restoration algorithms in order to get high quality image.

- *Development of Microwave Radiometer for Atmosphere and Earth Radiation Monitoring:*

Sensor System Lab at Gwangju Institute of Science and Technology got contract from Korean State and Engineering Foundation (KOSEF) for development of Dual Channel Radiometer for Earth and Atmospheric Monitoring (DREAM). DREAM is main payload on Science and Technology Satellite-II, which is schedule to launch in December 2010 by Korean Satellite Launch Vehicle (KSLV). In this project different calibration issues (pre-launch and post launch) of DREAM are addressed. And I also found out that the atmospheric and environmental contamination at different position.

- **Assistant Professor (November 2008 – October 2009)**
Department of Computer Science and Engineering, Galgotias College of Engineering and Technology, Greater Noida, India.

I deliver the lecture on discrete mathematics to M.Tech., Artificial Intelligence (AI) and Digital Image Processing for B.Tech. Students.

➤ **Project Associate (August 2000 – March 2003)**

Advisor: Prof. U. S. Tiwary, J. K. Institute of Applied Physics and Technology,
Allahabad, India

- *Medical Imaging System for Early Detection of Cancer (MISED Cancer):*

Feasibility analysis of the low cost and safe x-ray radiographic system for early detection of cancer was done. A prototype model and algorithm for getting high quality image was developed. This project was financially supported by DST government of India.

Honors and Awards

- Brain Korea – 21 (BK-21) financial supports for research on Medical application of millimeter-wave.
- Korea State and Engineering Foundation (KOSEF) fellowship from 2003 – 2006.

Academics Activity: Teaching

Courses Taught: UG, PG, and PhD courses

Department of Computer Science (B.Sc. + M.C.A+ M.Sc. +Ph.D.):

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| 1. Discrete Mathematical Structures | 5. Mathematical Foundations of Computing |
| 2. Digital Signal Processing, Sensor And Systems | 6. Probability Statistics for Computer Science |
| 3. Statistical Pattern Recognition | 7. Programming for Problem Solving |
| 4. Data Structures and Algorithms | 8. Image Processing |

DST –CIMS (M.Sc. + Ph.D.):

- | | |
|---|---|
| 1. Mathematics and Computing: Logic and Graph Theory | 5. Two dimensional signal and image processing |
| 2. Fundamental of Computer Programming : C and MATLAB | 6. Advanced Digital Signal Processing |
| 3. Data Structure and Design & Analysis of Algorithms | 7. Approximation, Denoising and Inverse Problem through Wavelet |
| 4. Digital Signal Processing | 8. Analysis of Sampled Imaging System |

M.Sc. / MCA Project Mentored (Dept. of CS and DST-CIMS):

More than forty students supervised, some who are doing very well are as follows:

- Ajay Kumar (Ph.D., University of Missouri, USA)
- Dhiresb Yadav (Civil Servant).
- Varad Srivastava(M.S. IIT Delhi).
- Pankhuri Jain (Ph.D., IIT-BHU).
- Soumya Kanti Mandal (M.Tech. IIIT Kalyani, Assistant professor, Kazi Nuzurul Univ.)
- Dipika Yadav (Researcher, BHU).
- Rahul Roy (M.Tech., NITK, Technology Associate, Morgan Stanley).
- Sayantan Saha (Ph.D., Chennai Mathematical Institute(CMI)).
- Shashank Kesarwani (M.Tech., IIIT Allahabad, Prayagraj).
- Mohit Jaiswal (Technology Manager, TCS).
- Utkarsh Narayan Mishra (Program office, WIPRO).
- Mrityunjay Chaubey (Ph.D., BHU).
- Prakash Mishra (Ph.D. , IIT Delhi).
- Akanksha Singh (Ph.D., IIT Kanpur).
- Dr. Shikha Dubey (Ph. D., GIST, South Korea, PDF university of Utah, USA),
BHU Gold Medal
- Dr. Ekta Srivastava (Ph. D., GIST, South Korea, PDF IIT Delhi).
- Ruchilekha, Ph.D., BHU.
- Ravi Pratap Singh, Ph.D., BHU.

Development of Course Curriculum:

Department of Computer Science:

1. Involved in design and development of new curricula and courses of Bachelor of Science Honors (B.Sc. Hons) and Master of Science (M.Sc.) in Computer Science, Master of Computer Applications (MCA), Master of Technology (M.Tech.) in Artificial Intelligence, and Doctor of Philosophy (Ph.D.) for the department of Computer Science. I developed the content of the following subjects:

Ph.D. / M.Sc. / M.C.A / B.Sc. Courses:

- | | |
|--|--|
| 1. Discrete Mathematical Structures | 4. Compressive Sensing and Applications |
| 2. Mathematical Foundations of Computing | 5. Digital Signal Processing, Sensors, and Systems |
| 3. Statistical Pattern Recognition | 6. Speech Processing and Recognition |

M.Tech.(AI):

1. Mathematics for Machine Learning
2. Compressive Sensing and Applications
3. Digital Signal Processing, Sensors, and Systems
4. Speech Processing and Recognition
5. Statistical Pattern Recognition

DST-CIMS:

1. Developed the new course curriculum for special Master of Science (M.Sc.) program on **Computational Science and Applications in Signal Processing**. Course is started from academic session 2014.
2. Developed the new curricula and courses for the following subject for **Ph.D. course** work at DST-CIMS:

Core Course:

- Mathematics and Computing
- Probability Theory Statistics and Computing

Research Specific Course:

- Foundations of Fourier and Wavelet Analysis.
- Advanced time frequency methods and their applications.
- Digital Signal Processing, Sensor and Systems.
- Numerical Methods.
- Bio-Inspired Computational Method / Machine Learning.

Academics Activity: Research**Ph. D. Thesis Supervision:**

Awarded: 04, Submitted : 03, Ongoing : 02

Awarded:

1. **Dileep Kumar Patel (2014)**
Title: Some Studies On Handwritten Character Recognition Problems.
(**Lecturer, Bihar Gov. College**)
2. **Pranav Wallia (2016)**
Title: Computational Framework and Algorithmic Solutions To Matchmaking Problems. (**Principal Data Scientist, DELL, INDIA**)
3. **Dharam Raj Singh (2017)**
Title: Solution of Some Graph Based Problem Using Heuristic (**Assistant Professor, U.P. Gov. Degree College**)
4. **Suneel Kumar (2019)**
Title: Machine Learning Techniques To Enhance The Performance of Cloud Based Applications. (**Lecturer, Bihar Gov. College**)

Submitted:

1. **Ravi Pratap Singh (July 2017 -2024)**
Title: Modeling and analysis of optical imaging system and inverse problem approach for image restoration
2. **Ruchilekha (July 2017 - 2024)**
Title: Emotion Recognition using Brain Signals in Affective Computing Framework. (PDF offered by Chonnam National University, Gwangju, South Korea)
3. **Suneel Kumar (Sept. 2018 - 2024)**
Title: Content-Based Visual Information Retrieval using Deep Architecture and Fusion Framework (Assistant Professor, PSIT, Kanpur)

Ongoing:

1. **Mona Singh (Sept. 2018 -)**
Title: Medical Image Retrieval using Deep Architecture and Dimensional Reduction Framework.
2. **Shaurya Prakash (Sept. 2020 -)**
Title: Symptom detection and mental diseases prediction for Hindi speaking person.
3. **Dileep Kumar (Sept. 2024 -)**

Projects:

Completed: 04 (PI : 02, Co-PI: 02)

1. **Title:** Skill Development of Youth in Digital Technologies in Tier –II & Tier – III cities in Uttar Pradesh and Uttrakhand.
Co-PI: Dr. Manoj Kumar Singh
Sponsor: Ministry of Electronics and Information Technology (MeitY), Government of India.
Period: 2021 – 2023
Amount: INR 398.29 Lakh
Remark: This project aims to skill development for Artificial Intelligence and Data Science.
2. **Title:** AI-Based Predictive Analytics of Visitors to Public Places and Its Applications for Better People Management.
Co-PI: Dr. Manoj Kumar Singh
Sponsor: Ministry of Electronics & Information Technology (MeitY), e-Governance Group.
Period: 2021 – 2024
Amount: INR 35.21 Lakh
Remark: In this project a prototype system (Hardware + Software) is developed for profiling of age, gender, people count, and developed sentiment model based on video feed of crowd available from public places.
3. **Title:** Compressive Sensing and Applications
PI: Dr. Manoj Kumar Singh
Sponsor: DST- Gov. India under MATRICS scheme
Period: 2019 – 2021
Amount: INR 6,60,000/-
Remark: Development of compressive sensing framework.

4. Title: System Modeling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor.
PI: Dr. Manoj Kumar Singh
Sponsor: DST Government of India and Ministry of Education, Science and Technology, South Korea.
Period: June 2011 ~ June 2014.
Amount: INR 47,00,000/- (Forty Seven Lakh)
Remark: Using Microwave sensor to extract Heart beat, Respiration, and ECG information.
- A prototype system is developed.
- Man Power:
• Dr. Akhilesh Kumar Gupta, Research Associate, University of Nebraska Omaha, USA.
• Salony Permanand, IT consultant, ENHIRA Software Services Ltd

Project under review: 01

Title: GUARDRAILS AI Guardrails Safeguarding AI with Robust and Explainable Frameworks
PI: Manoj Kumar Singh
Sponsor: International Cooperation Division, DST, Gov. of India, and European Union (EU).
Period: 03 year.
Amount INR 1,49,63,470/-

Publications: 69 (Detail in Annexure – I)

- Journal: 23
- Conference Proceeding: 35
- Book Chapter: 02
- Books / Lecture Material / Technical Report / Edited Conference Proceeding: 09

Tutorial and Invited Talk Delivered: 46 (Detail in Annexure – II)

Conference / School Organization: 06 (Detail in Annexure – III)

Session Chair in Conferences: 08 (Detail in Annexure – III)

Members in Technical Committees of Conference & Workshop: 08 (Detail in Annexure – III)

International Visit and Collaborations:

1. **One weak visit (Nov 08 – Nov. 16, 2024)** to Graduate School of Data Science, Chonnam National University, Gwangju, South Korea ; School of Computer Science and Engineering, College of Information Technology, Soongsil University, Seoul, South Korea.
2. **One month visit (05 May -12 June 2014)** to Microwave Sensor and System Lab, Department of Mechatronics, Gwangju Institute of Science and Technology (GIST), under Indo-Korea Joint project on System Modeling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor. This project is supported by department of science and technology (DST), government of INDIA, and ministry of education, science and technology republic of Korea.

3. **Two month visit (21 May -24 July 2012)** to Microwave Sensor and System Lab, Department of Mechatronics, Gwangju Institute of Science and Technology (GIST), under Indo-Korea Joint project on System Modeling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor. This project is supported by department of science and technology (DST), government of INDIA, and ministry of education, science and technology republic of Korea.
4. **Two month visit (May 2011 – June 2011)** to Microwave Sensor and System Lab at Gwangju Institute of Science and Technology South Korea for collaborative work in the area of application of microwave for health monitoring.

Outreach Academic Activity

- Associated to Ramanujan Society of Mathematics and Mathematical Sciences.

I visit the different school and colleges of district Jaunpur and Sultanpur of Uttar Pradesh. During this visit I interact and give motivational lecture on history mathematics and computing as well as basics concepts behind the topics included in their curriculum. (See detail in invited lecture **Annexure -II**).

- **Academic Project:**

1. Salony Permanand, “Modeling and Signal Processing of Doppler Radar For Heart And Respiration Rate Measurement,” 2013. MCA student From KNIT, Sultanpur, Uttar Pradesh, INDIA.

Present Position: IT consultant, ENHIRA Software Services Ltd

2. Shashank Mishra, “Image Deconvolution / Deblurring / Denoising Using Wavelet Transform and Bayesian Framework,” 2013. MCA student from VIT, Vellor, INDIA.

Present Position: Research Assistant, National University of Tainan.

- **Summer Internship:**

1. Ritika Singh, (**May – June, 2012**)

- MCA – 2nd year , Galgotias College of Engineering and Technology, Greater Noida, U.P., INDIA.

2. Salony Permanand, (**May – June, 2012**)

- MCA – 2nd year , Kamala Nehru Institute of Technology (KNIT), Sultanpur, U.P., INDIA.

Ritika Singh and Salony Permanad developed the online automated feedback system for lectures organized during workshop, conference, seminar and regular course work of university and colleges.

3. Arpit Kumar Mittal (**21 May – July 23, 2012**)

- Integrated M.Tech. -2nd year, Department of Electronics and Communication Engineering, Indian Institute of Technology (IIT) Roorkee, Roorkee, INDIA.

4. Madhur Kathuriya (**21 May – July 23, 2012**)

- Integrated M.Tech. -2nd year, Department of Electronics and Communication Engineering, Indian Institute of Technology (IIT) Roorkee, Roorkee, INDIA.

Arpit and Madhur studied the digital signal processing for microwave doppler for cardiopulmonary sensing. They studied the adaptive noise cancellation algorithm and method for finding respiration and heart signal from the data obtained from Doppler radar. The heart rate variability and respiration rate are estimated from heart and respiration signal.

5. Malhaar Srivastava (**June 10– July 10, 2015**)
 - Kamla Nehru Institute of Technology (KNIT), Sultanpur, Uttar Pradesh.
6. Sandeep Shukla (**June 10– July 10, 2015**)
 - Kamla Nehru Institute of Technology (KNIT), Sultanpur, Uttar Pradesh.
7. Vaibhav Singh (**June 10 –July 10, 2015**)
 - Kamla Nehru Institute of Technology (KNIT), Sultanpur, Uttar Pradesh.

Malhaar, Sandeep, and Vaibhav studied digital signal processing and image restoration.
8. Avaneesh Singh (**June 01 – July 30, 2017**)
 - U. N. S. Institute of Engineering & Technology, V.B.S. Purvanchal University, Jaunpur, Uttar Pradesh
9. Siddharth Raghuvanshi (**June 15 – July 30, 2017**)
 - Babu Banarasi Das University, Lucknow, Uttar Pradesh.

Avaneesh and Siddharth learned MATLAB programming and basics of image processing.
10. Kashish Rath (**December 17 – January 06, 2019**)
 - B.Tech. Dept. of Electrical and Electronics Engineering, Veer Sunder Sai University of Technology, Burla, Sambalpur, Odisha

She explored the image annotation image in machine learning framework.
11. Mansi Maurya (**May 01 – July 31, 2021**)
 - Institute of Engineering and Technology (IET), Lucknow, Uttar Pradesh

She learned image processing and investigated the detection and classification of cataract from optical image of eye in machine learning framework.

Community Service

Contribution to Co-curricular Activities / Academic Responsibility:

- Teacher mentor for sport club of the department.
- Mentor for MCA Ist year.
- In-charge attendance monitoring of the department.
- Teacher in charge of department library.
- In-charge of department writes off committee.
- Coordinator of course curriculum development for NEP.

BHU Administrative Assignment / Additional Responsibility:

- Course Coordinator of M.Sc. Computational Science and Application in Signal Processing (2014 -2020) at DST-CIMS
- Teacher In charge Admission Committee of M.Sc. Computational Science and Application in Signal Processing (2014 – 2020).
- Member Admission Committee MCA , M.Sc. Dept. of Computer Science.
- Member Dress Distribution Committee for Convocation (2017 – 2020)

Member of Academic Body of University / Institute

1. Academic Council, Banaras Hindu University (BHU), Varanasi -221 005.
2. Board of Study (BOS) of Dept. of Computer Science, Banasthali, Vidyapeeth, Rajasthan - 304022.
3. Board of Study (BOS) of Master of Computer Science, Maharaja Suheldev State University, Azamgarh, Uttar Pradesh.
4. Board of Study (BOS) of Master of Computer Science, Maharaja Suheldev State University, Azamgarh, Uttar Pradesh.
5. Ad-hoc, Board of Study of Master of Technology (M.Tech.) in Artificial Intelligence, Dept. of Computer Science, Faculty of Science, Banaras Hindu University (BHU), Varanasi-221 005.

Membership and Service to Professional Societies:

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| 2006 - Present | Member of the IEEE. (Membership No.: 80655670) |
| 2006 - Present | Member of the IEEE signal processing society. |
| 2008 - Present | Reviewer for IEEE Transaction on signal processing. |
| 2008 - Present | Reviewer for EURASIP Journal on advances in signal processing. |
| 2017 - Present | Associate Editor of South East Asian Journal of Mathematics and Mathematical Sciences (https://rsmams.org/journals/seajmams/home) |
| 2017 - Present | Associate Editor Journal of Ramanujan Society of Mathematics and Mathematical Sciences (https://www.rsmams.org/journals/jrsmams/home) |

References

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| 1. Prof. Umashanker Tiwary
Indian Institute of Information Technology Allahabad, Devghat Jhalwa, Allahabad- 211 015, India.
E-mail: ustiwary@gmail.com
Phone: 91-532-2552324.
Web: www.iita.ac.in | 2. Prof. Yong - Hoon Kim
Sensor System Laboratory, Dept. Mechatronics, Gwangju Institute of Science and Technology, 1, Oryong-dong, Puk-gu, Gwangju -500 712, South Korea.
E-mail: yhkim@gist.ac.kr ,
Phone: +82-62-970-2387 |
| 3. Prof. Georgy Shevlyakov
Visiting Professor at GIST & Professor of Mathematics at St. Petersburg State Polytechnic University, RUSSIA.
Mail: Georgy.Shevlyakov@gmail.com ,
https://www.geocities.ws/gshevlyakov/ | 4. Prof. Umesh Singh
Professor in Department of Statistics & Ex-Prof. Statistics & Coordinator of DST-CIMS, Banaras Hindu University(BHU), Varanasi.
Phone: +91-9415618838 |
| 4. Prof. Vladimir Katkovnik
Faculty of Information Technology and Communication Science & Computing Sciences, Tampere University, Korkeakoulunkatu 7, 33720, Tampere, Finland.
E-mail: vladmir.katkovnik@tuni.fi
https://www.tuni.fi/en/vladimir-katkovnik | |

Research Article Details

Journals and Proceeding Articles:

Published:

1. Ravi Singh, Manoj Kumar Singh, "An efficient hybrid threshold for image deconvolution in expectation maximization framework", *Circuits, Systems & Signal processing* (Sept. 07, 2023) (IF: 2.3) (**Accepted on Oct. 10, 2024**)
2. Ravi Singh, Manoj Kumar Singh, "Image Deconvolution using Hybrid Threshold based on modified L1-clipped penalty in EM framework", *Signal Processing*, vol. 227, 2024, (will appear issue of February 2025) (IF: 3.4)
3. Ravi Singh, Manoj Kumar Singh, "Hybrid Thresholding for Image Deconvolution in Expectation Maximization framework", *The Imaging Science Journal, The Royal Photo Graphic Society, Taylor & Francis*, pp. 1-18. <https://www.tandfonline.com/doi/full/10.1080/13682199.2024.2349340> (IF: 0.2), 2024.
4. S. Indolia, S. Nigam, R. Singh, V. K. Singh and M. K. Singh, "Micro Expression Recognition Using Convolution Patch in Vision Transformer," in *IEEE Access*, vol. 11, pp. 100495-100507, 2023, doi: 10.1109/ACCESS.2023.3314797. (IF: 3.5)
5. Ruchilekha, **Manoj Kumar Singh**, Mona Singh, "A deep learning approach for subject-dependent & subject-independent emotion recognition using brain signals with dimensional emotion model", *Biomedical Signal Processing and Control*, Volume 84, 2023, 104928, ISSN 1746-8094, <https://doi.org/10.1016/j.bspc.2023.104928>. (IF 5.1)
6. Swati Nigam, Rajiv Singh, **Manoj Kumar Singh**, Vivek Kumar Singh, "Multiview Human Activity Recognition Using Uniform Rotation Invariant Local Binary Patterns", *Journal of Ambient Intelligence and Humanized Computing*. **14**, 4707-4725 2023, doi: 10.1007/s12652-022-04374-y . (IF: 3.662), ISSN: 1868-5137
7. Suneel Kumar, **Manoj Kumar Singh**, Manoj Mishra, "Efficient Deep Feature Based Semantic Image Retrieval", *Neural Process Lett* **55**, 2225-2248, 2023. doi: <https://doi.org/10.1007/s11063-022-11079-y> (IF = 3.1), ISSN : 1370-4621
8. 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*, Vol. 22, No. 2, 2018, pp. 491-503, ISSN : 2007-9737 (SCIE)
9. Siddharth Singh, Vivek Singh Rathore, Rajiv Singh, Manoj Kumar Singh, "Hybrid semi-blind image watermarking in redundant wavelet domain," *Multimedia Tools and Applications*, *Multimed Tools Appl* **76**, 19113-19137 (2017). <https://doi.org/10.1007/s11042-017-4570-8> ISSN: 1380-7501 (Print) 1573-7721 (Online) (SCI, IF : 3.6)
10. Pranav Waila, Vivek Kumar Singh, Manoj Kumar Singh, "A Scientometric Analysis of Research in Recommender Systems," *Journal of Scientometric Research*, Vol. 5, No. 1, 71 - 84 , 2016. ISSN: 2321-6654(Print), 2320-0059(Online). DOI: 10.5530/jscires.5.1.10 (IF: 0.81)
11. 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)
12. 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. 10.4236/jsip.2012.32028
 13. 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.
 14. 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.
 15. **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) doi:10.2528/PIERB10042002
 16. **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.
 17. **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
 18. **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
 19. Suneel Kumar, Mona Singh, Ruchilekha, and Manoj Kumar Singh, “Semantic Segmentation Based Image Signature Generation for CBIR,” *IHCI 2023. Lecture Notes in Computer Science*, vol 14532, pp. 319 -329, ISBN978-3-031-53829-2, doi: 10.1007/978-3-031-53830-8_33.
 20. Varad Srivastava, Ruchilekha, and Manoj Kumar Singh, “GenEmo-Net: Generalizable Emotion Recognition using Brain Functional Connections Based Neural Network,” *IHCI 2023. Lecture Notes in Computer Science*, vol 14531, pp. 87-98, https://doi.org/10.1007/978-3-031-53827-8_9.
 21. Shaurya Prakash, Manoj Kumar Singh, Uma Shanker Tiwary, and Mona Srivastava, “HUCMD : Hindi Utterance Corpus for Mental,” *IHCI 2023. Lecture Notes in Computer Science*, vol 14531, pp. 44-54, https://doi.org/10.1007/978-3-031-53827-8_5.
 22. Ruchilekha, Varad Srivastava, and Manoj Kumar Singh, “Emotion recognition using Phase-Locking-Value Based Functional Brain Connection Within-Hemisphere and Cross-Hemisphere,” *IHCI 2023. Lecture Notes in Computer Science*, vol 14531, pp. 115 – 126, https://doi.org/10.1007/978-3-031-53827-8_12.
 23. M. Singh and M. K. Singh, "An Effective Deep Learning Model for Content-Based Gastric Image Retrieval," *IEEE Proceeding of the 6th International Conference on*

- Information Systems and Computer Networks (ISCON), Mathura, India, March 03-04, 2023, pp. 1-6, doi: 10.1109/ISCON57294.2023.10112189. ISBN:979-8-3503-4697-8.
24. R. P. Singh and M. K. Singh, "Risk Minimization Approach for Image Restoration Using L2 Penalty in EM Framework," IEEE Proceeding of the 6th International Conference on Information Systems and Computer Networks (ISCON), Mathura, India, March 03-04, 2023, pp. 1-4, doi: 10.1109/ISCON57294.2023.10112127. ISBN:979-8-3503-4697-8.
 25. Ruchilekha and **Manoj Kumar Singh**, "Empirical study of emotional state recognition using multimodal fusion framework," ACM Proceeding of 2023 5th International Conference on Image, Video and Signal Processing (IVSP 2023), pp. 27-36, March 24-26, 2023, Singapore, <https://doi.org/10.1145/3591156.3591160>. ISBN 978-1-4503-9838-1/23/03.
 26. M. Singh, S. Kumar, Ruchilekha and **M. K. Singh**, "A Comparative Study of Feature Extraction Techniques and Similarity Measures for Image Retrieval," Proceeding of the IEEE 2022 International Conference on Futuristic Technologies (INCOFT), Belgaum, India, 2022, pp. 1-7. doi: 10.1109/INCOFT55651.2022.10094430. ISBN:978-1-6654-5046-1
 27. Suneel Kumar, **Manoj Kumar Singh** and Manoj Kumar Mishra, "Improve Content-based Image Retrieval using Deep learning model," Journal of Physics: Conference Series, Volume 2327, 4th International Conference on Intelligent Circuits and Systems, April 07 – 09, 2022. doi: 10.1088/1742-6596/2327/1/012028
 28. Swati Nigam, Rajiv Singh, **Manoj Kumar Singh**, Vivek Kumar Singh, "Multiple Views Based Recognition of Human Activities using Uniform Patterns," IEEE proceeding of the 2021 Sixth International Conference on Image Information Processing (ICIIP), 26-28 November 2021, Shimla, India. doi:10.1109/ICIIP53038.2021.9702576, pp. 483-488, ISBN:978-1-6654-3361-7 (electronic), ISBN:978-1-6654-3362-4 (print)
 29. Dubey S., A. K. Singh and M. K. Singh, "Speech Enhancement using Adaptive Mean Median Deviation and EMD Technique," 2019 IEEE International Conference on Signals and Systems (ICSigSys), Bandung, Indonesia, July 16-18, 2019, pp. 34-39, doi: 10.1109/ICSIGSYS.2019.8811077. ISBN: 978-1-7281-2178-9.
 30. Dharm Raj Singh, **Manoj Kumar Singh**, Tarkeshwar Singh, "Multiple Traveling Salesman Problem using novel Crossover and Group Theory," IEEE Proceeding of 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.
 31. 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
 32. 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.
 33. 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.

34. 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 Recommendation," 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.
35. **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 .
36. 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 .
37. 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 (ICCIC), ISSN: 978-1-4799-2432-5, pp. 1166 – 1171, Dec. 26 -28, 2013, Madurai, INDIA.
38. 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 (ICCIC), ISSN: 978-1-4673-1342-1 , pp. 458 – 463, Dec. 18 -20, 2012, Coimbatore, INDIA .
39. 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.
40. **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*).
41. 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.
42. **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.
43. **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.
44. 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.

45. **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.
46. **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
47. 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
48. 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.
49. 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, IIIT Allahabad, 20-23 February 2004.
50. **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, IIIT Allahabad, 20-23 February 2004.
51. **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.
52. 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.
53. **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.

Manuscript In Revision:

1. Mona Singh, Suneel Kumar, **Manoj Kumar Singh**, “Content-based Medical Image Retrieval with Dimensionality Reduction”, Computers and Electrical Engineering, (**in revision**). **IF 4.0**
2. Mona Singh, Suneel Kumar, **Manoj Kumar Singh**, “ Content Based Diabetics Retinopathy and Gastrointestinal Image Retrieval Using Deep Learning Features and SVM Predicated Query Class ”, Computers in Biology and Medicine,(**in Revision**) **IF 7.0**

Revision Submitted:

3. Suneel Kumar, Manoj Kumar Singh, Manoj Mishra, “DFFnet: Delay Feature Fusion Network for Efficient Content-Based Image Retrieval”, Pattern Analysis and Applications (Aug. 05, 2023) **IF : 3.9. (In review after minor revision)**

Book Chapter:

1. Ruchilekha, Manoj Kumar Singh, Rajiv Singh, "Towards Deep Learning based Wilt Disease Detection System", Intelligent Systems and Smart Infrastructure, Edited by Brijesh Mishra et al. (eds), Taylor Francis Group London, Chapter 57, pp. ISBN 978-1-032-41287-0, 2023.
2. 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.

Books / Lecture Material / Technical Report / Conference Proceeding:

1. Lecture notes with A.M. Mathai and Umesh Singh, An Introduction To Fractional Calculus, DST-CIMS, Banaras Hindu University (BHU), Varanasi -221 005., 324 pages, 2013.
2. Lecture notes with A.M. Mathai and Umesh Singh, Probability and Random Variable, DST-CIMS, Banaras Hindu University (BHU), Varanasi -221 005, 72 pages, 2013.
3. Lecture notes with A.M. Mathai and Umesh Singh for the Workshop on Multivariate Analysis : Matrix Method – 28 Nov- Dec 03,2011.
4. Umesh Singh, **Manoj Kumar Singh**, DST-CIMS lecture note for Friday lecture series on fundamentals of statistics. **under publication.**
5. R. S. Pathak, **Manoj Kumar Singh**, DST-CIMS lecture note for Friday lecture series on fundamentals of multiresolution analysis (MRA) and wavelet with application. **under publication.**
6. **Editor** for Proceeding of National Seminar on Impact of Physics on Biological Science, **August 26, 2010**, Department of Physics, Ewing Christian College (ECC), Allahabad India. **ISBN No.:** 978-81-905712-9-6.
7. **Manoj Kumar Singh**, Umesh Singh, Lecture Note for Winter School on Statistical Estimation and Modeling: Topics on Least Square Methods, Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing, Feb.2 -14, 2011, @ DST- CIMS Banaras Hindu University (BHU), India.
8. Yong Hoon Kim, **Manoj Kumar Singh**, A report for joint research program for system and signal processing between GIST and IIITA- submitted to Korea foundation for international cooperation of science and technology (KICOS), South Korea, 2008.
9. **Manoj Kumar Singh**, Yong Hoon Kim, Calibration Issues of Spaceborne Microwave Radiometer DREAM on STSAT-II, submitted to Sensor System Lab, Gwangju Institute of Science and Technology, South Korea, 2007.

Tutorial and Talk Delivered

1. **Expert Lecture:** Pictorial representation of Relation and Application, Nov. 17, 2023, National workshop on Advancement, Quality Education, and Inspiring School Students in Mathematics and Science through Fair, Exhibition, Quiz and Documentary (Part – II), Organized by Ramanujan Society of Mathematics and Mathematical Sciences at Shri Vishwanath Intercollege, Kalan, Sultanpur(U.P.), INDIA, November 15 – 19, 2023.
2. **Expert Lecture:** Data Transformation and Discovery- Exploring Dimensional Reduction, November 13, 2023, Graduate School of Data Science, Chonnam National University, Gwangju, South Korea.
3. **Expert Lecture:** Set and Relations, July. 18, 2023, National workshop on Advancement, Quality Education, and Inspiring School Students in Mathematics and Science through Fair, Exhibition, Quiz and Documentary, Organized by Ramanujan Society of Mathematics and Mathematical Sciences at Bayalayasi Inter College, Jaunpur (U.P.), , INDIA, July 15 – 19, 2023.
4. **Expert Lecture:** Early Non-Invasive Medical Diagnostics, March 28, 2023, at Leica Microsystems a Subsidiary of Danhar India Development, Bengaluru, India.
5. **Expert Lecture:** Inverse Problem, September 23, 2022, One week Training program “STUTI on Mathematics for Machine Learning”, Organized by DST-Centre for Interdisciplinary Mathematical Sciences, Institute of Science, Banaras Hindu University, Varanasi. September 19 – 25, 2022.
6. **Invited Lecture:** Inverse Problem in Imaging, August 27, 2022, One Week High-End Workshops (“KAARYASHALA”) On The Brain-Machine Interface, at Birla Institute of Technology(BIT), Mesra, Ranchi, Jharkhand, INDIA. August 22-28, 2022.
7. **Invited Lecture:** An Introduction to Artificial Intelligence, September 10, 2021, DST Sponsored National Workshop on Popularization, Improvement, and Quality Education in Science & Mathematics and its Impact for School Students and Teachers (Part –III), Organized by Ramanujan Society of Mathematics and Mathematical Sciences at Janak Kumari Intercollege, Husainabad, Jaunpur (U.P.), INDIA. September 10 – 13, 2021.
8. **Invited Lecture:** Set Theory, Relations, and its Applications March 07, 2021, DST Sponsored National Workshop on Popularization, Improvement and Quality Education in Science and its impact for School Students and Teachers (Part -II), Organized by Ramanujan Society of Mathematics and Mathematical Sciences, at Raja Harpal Singh Mahavidyalay, Sigraamau, Jaunpur (U.P.), INDIA. March 04-07, 2021.
9. **Invited Lecture:** Notion of Set, Relation, and Ordering, March 07, 2021, DST Sponsored National Workshop on Popularization, Improvement and Quality Education in Science and its impact for School Students and Teachers (Part -II), Organized by Ramanujan Society of Mathematics and Mathematical Sciences, at Raja Harpal Singh Mahavidyalay, Sigraamau, Jaunpur(U.P.), INDIA. March 04-07, 2021.
10. **Keynote Lecture:** Inverse Problem in Imaging, March 08, 2021, Faculty Development Program on Innovations and Research Trends in Artificial Intelligence, Organized by Centre for Artificial Intelligence, Banasthali, Vidyapith, Rajasthan, INDIA. March 03 – 08, 2021.
11. **Keynote Lecture:** Machine Learning And Its Application, July 19, 2020, International Webinar on Peaceful Life in Post COVID – 19 Era: Resilience from Biophysics, Electronics and Computer Application, Centers for Biophysics, Electronics & Computer Application, Ewing Christian College, Prayagraj, INDIA., June 19 -21, 2020.

12. **Expert Lecture:** Linear Classification, Short Term Course on Artificial Intelligence: Theories, Techniques and Applications, January 13, 2020, Organized by Centre for Artificial Intelligence, Banasthali, Vidyapith, Rajasthan, INDIA. January 08 – 13, 2020.
13. **Expert Lecture:** Inverse Problem, January 13, 2020, Short Term Course on Artificial Intelligence: Theories, Techniques and Applications, Organized by Centre for Artificial Intelligence, Banasthali, Vidyapith, Rajasthan, INDIA, January 08 – 13, 2020.
14. **Invited Lecture:** Pictorial Representation of Relation and Some Applications, November 10, 2019, National Conference on Number Theory, Special Functions and their Applications in Computer Science, Organized by Ramanujan Society of Mathematics and Mathematical Sciences, and Dept. of Mathematics, T.D.P.G. College, Jaunpur (U.P.), November 08 -10, 2019.
15. **Expert Lecture:** Modeling and Simulation of Inverse Problem in Imaging, July 30, 2019, Short term training programme on “Computational Techniques in Research Methodology for Science and Social Sciences, Faculty Development Centre (PMMMMNMTT), Hemvati Nandan Bahguna, Garhwal University, Srinagar, Uttarakhand-246174.
16. **Invited Lecture:** Counting: A Historical Perspective, February 23, 2019, DST Sponsored National Workshop on Science Fair Creating Awareness, Interest, Motivation in Science and Mathematics for School Student and Teacher: Part –III, Organized by Ramanujan Society of Mathematics and Mathematical Sciences, at Nehru Balodyan Sr. Secondary School, Kanhaipur, Jaunpur (U.P.), India, February 20 – 23, 2019.
17. **Invited Lecture:** Set and Relation, December 30, 2018, DST Sponsored National Workshop on Science National Workshop on Fair Creating Awareness, Interest, Motivation in Science and Mathematics for School Student and Teacher: Part –II, Organized by Ramanujan Society of Mathematics and Mathematical Sciences, at Raja Harpal Singh Mahavidyalay, Sigraamau, Jaunpur(U.P.), INDIA. December 28-31, 2018.
18. **Expert Lecture:** Imaging and Its Application to Security, March 28, 2018, Refresher Course in Computer Application, University of Allahabad, Allahabad, INDIA.
19. **Expert Lecture:** Imaging and its Application to Medical Diagnosis, March 28, 2018, Refresher Course in Computer Application, University of Allahabad, Allahabad, INDIA.
20. **Invited Lecture:** Non Parametric Estimation of Density Function With Application, October 30, 2017, CSIR, INSA & TIMC Sponsored National Conference on Ramanujan: A Goddess Gifted Mathematician, Organized by Dept. of Mathematics, T.D.P.G. College, Jaunpur, and Ramanujan Society of Mathematics and Mathematical Sciences, October 30 – 31, 2017.
21. **Invited Lecture:** Inverse Problem, October 29, 2017, DST & TIMC Sponsored National Conference On Discrete Mathematics, Theoretical Computer Science, Computer Engineering and Mathematics, Organized by Ramanujan Society of Mathematics and Mathematical Sciences, and Dept. of Mathematics, T.D.P.G. College, Jaunpur (U.P.), India, October 28-29, 2017.
22. **Invited Lecture:** Inverse Problem in Imaging, January 31, 2017, National Seminar on Emerging Trends in ICT, Organized by School of Science U,P, Rajarshi Tandon Open University, Allahabad.
23. **Invited Lecture:** Early Non-Invasive Medical Diagnostics, January 30, 2017, National Seminar on Emerging Trends in ICT, Organized by School of Science U,P, Rajarshi Tandon Open University, Allahabad.

24. **Invited Lecture:** Physical field and radiations of human: New methods for early non-invasive medical diagnostics, Nov. 06, 2016, National Conference on Recent trends of research in mathematics and applications in Diverse Fields, Organized by Ramanujan Society of Mathematics and Mathematical Sciences in collaboration with Department of mathematics TDPG college, Jaunpur, Nov. 3-5, 2016.
25. **Invited Lecture:** Non Parametric Estimation Of Density Function with Application, Nov. 5, 2016, National Conference on Recent trends of research in mathematics and applications in Diverse Fields, Organized by Ramanujan Society of Mathematics and Mathematical Sciences in collaboration with Department of mathematics TDPG college Jaunpur, Nov. 3-5, 2016.
26. **Invited Lecture:** Inverse Problem in Imaging, Nov. 4, 2016, National Conference on Recent trends of research in mathematics and applications in Diverse Fields, Organized by Ramanujan Society of Mathematics and Mathematical Sciences in collaboration with Department of mathematics TDPG college Jaunpur, Nov. 3-5, 2016.
27. **Expert Lecture:** Non Parametric Estimation Of Density Function with Application, July 11, 2016, Two week faculty development programme on Simulation and Mathematical Tools for Engineering Research, Sponsored by AICTE, July 04 -15, 2016, Department of Electronics Engineering, Kamla Nehru Institute of Technology (KNIT), Sultanpur.
28. **Invited Lecture:** Modeling and Simulation of Optical Imaging : A Inverse Problem Approach, March 25, 2016, International Conference On Advances in Computing, Control and Communication Technology, University of Allahabad, March 25 -27, 2016.
29. **Expert Lecture:** Non parametric estimation of density function with application, Dec. 12, 2015, IEEE Workshop on Computational Imaging, Speech and Language Processing Organized by IIIT Allahabad, Dec. 12 – 13, 2015
30. **Expert Lecture:** “MATLAB Programming,” Nov. 27, 2015, Workshop on numerical computation using MATLAB, Department of Mathematics and Computer Science and Engineering, V.B.S. Purvanchal University, Jaunpur, Nov. 26 - 30, 2015.
31. **Expert Lecture:** “Modeling and Simulations of Inverse Problem in Imaging”, One week short term training program on Simulation and Mathematical Tool for Engineering Applications (SMTEA), @ Kamla Nehru Institute of Technology (KNIT), Sultanpur, India, July 30, 2015, TEIQP -II Program.
32. **Expert Lecture:** “Inverse Problem In Imaging,” Summer School on Image Processing- 2015 (SSIP-2015), @ National Institute of Technology Kurukshetra, Haryana, India, June 09, 2015, TEIQP -II Program.
33. **Expert Lecture:** “MATLAB for Engineer and Scientist,” Summer School on Image Processing- 2015 (SSIP-2015), @ National Institute of Technology Kurukshetra, Haryana, India, June 09, 2015, TEIQP Program.
34. **Seminar lecture:** “Micro local analysis of singular Fourier integral operators in synthetic aperture radar imaging”, Department of mechatronics, Gwangju Institute of Science and Technology(GIST), South Korea, May 27, 2014.
35. **Seminar lecture:** “Non parametric estimation of density function with application”, Department of mechatronics, Gwangju Institute of Science and Technology(GIST), South Korea, May 05, 2014.
36. **Seminar lecture:** “Non parametric estimation: an Application to Image Denoising and Deblurring”, Department of mathematical sciences (DMS), Korea Advanced Institute of Science and Technology (KAIST), South Korea, June 2, 2014.

37. **Tutorial:** “Linear algebra for machine learning and IR”, @ International workshop on machine learning and text analytics, South Asian University (SAU), New Delhi, Dec. 15, 2013.
38. **Seminar lecture:** “Analysis of Imaging System and Algorithm for Forming High Quality Image”, Department of mechatronics, Gwangju Institute of Science and Technology(GIST), South Korea, July 06, 2012.
39. **Invited lecture** on Physical Field and Radiations of Human: New Methods for Early Non - invasive Medical Diagnostics, IEEE Chapter at Allahabad University, August 27, 2011.
40. **Tutorial:** “Ill-conditioned Inverse Problems: Deconvolution / Deblurring”, Winter School on Statistical Estimation and Modeling: Topics on Least Square Methods, Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing, Feb.2 -14, 2011, @ DST- CIMS Banaras Hindu University (BHU), India.
41. **Tutorial:** “MATLAB for Engineer and Scientist”, Winter School on Statistical Estimation and Modeling: Topics on Least Square Methods, Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing, Feb.2 -14, 2011, @ DST- CIMS Banaras Hindu University (BHU), India.
42. **Invited lecture** on Application of microwave for animal monitoring, and electromagnetic fence, Indian Veterinary Research Institute (IVRI) Izatnagar, India, from December 27 – 29, 2010.
43. **Invited lecture** on Physical Field and Radiations of Human: New Methods for Early Non - invasive Medical Diagnostics, 4th International Conference on Disorder (Creation) and Natural Order (Nature), Sept. 19 – 21, 2010, University of Allahabad, Allahabad, India.
44. **Tutorial:** Inverse Problems and Its application to optical imaging @ IEEE Workshop On Recent Trends in Human Computer Interaction at IIIT Allahabad, Allahabad, India. Jan, 2009.
45. **Tutorial:** Passive millimeter-wave imaging principle and applications @ GIST, Korea. Jan. 8, 2008.
46. **Tutorial:** Inverse Problem and its Application in Millimeter –Wave Imaging @ IIIT Allahabad, India. Nov. 27, 2007.

Seminar / Workshop / Conference / School Organization

1. **Co-Conveners** International Conference “Recent Trends in Mathematical and Computational Sciences (RTMCS),” Feb. 03-05, 2023, organized by mathematical society-BHU at DST-Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University (BHU), Varanasi – 221 005.
2. **Convener** of IInd School on Signal, Image, Speech, and Language Processing, July 21 – August 01-14, 2014, @ DST- CIMS, Banaras Hindu University (BHU), Varanasi-221 005, INDIA.
3. **Convener** of workshop on Probability and Fractional Calculus: Jan. 25 – Feb. 2, 2013, @ DST-CIMS, Banaras Hindu University (BHU), Varanasi-221 005, INDIA.
4. **Program Chair**, International Conference on Advanced Computing, Networking and Informatics (ICACNI), 12-14 June, 2013, Central Institute of Technology, Raipur.
5. **Convener** of workshop on Multivariate Analysis: Matrix Method: Nov. 28- Dec. 03, 2011, @ DST- CIMS, Banaras Hindu University (BHU), Varanasi – 221 005, INDIA.
6. **Convener** of Winter School on Statistical Estimation and Modeling: Topics on Least Square Methods, Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing, Feb. 2 -15, 2011, @ DST-CIMS, Banaras Hindu University (BHU), Varanasi-221 005, INDIA.

Session Chair in Conferences:

1. Track: Computer Science
Date: Dec. 22, 2023
3rd International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2022),” at Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Dec. 22 – 24, 2022, Varanasi, INDIA..
2. Track Topic: User Centered Design
Date: Nov. 09, 2023.
15th International conference on Intelligent Human Computer Interaction (IHCI), Nov. 8 -10, 2023, Daegu, South Korea.
3. Track Topic: Computer Science and Application
Date: February 05, 2023.
International Conference of The Mathematical Society-BHU on Recent Trends in Mathematical and Computational Sciences (RTMCS), February 03 – 05, 2023, at DST-CIMS, Institute of Science, Banaras Hindu University (BHU), Varanasi, INDIA.
4. Track Topic: Computer Science
Date: December 23, 2022.
2nd International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2022),” at Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Varanasi, INDIA. December 22 – 24, 2022.
5. Track Topic: Computer Science
Date: December 17, 2022.
1st International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2021),” at Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Varanasi, INDIA. December 17 – 18, 2021.
6. Track Topic: Computer Science

Date : Dec. 16, 2016

International Conference of The Indian Mathematics Consortium (TIMC) in cooperation with American Mathematical Society (AMS), Dec. 14 – 17, 2016, at DST-CIMS, BHU.

7. Track Topic: Multimedia

Date : May 15, 2015.

International Conference on Computing Communication and Automation (ICCCA2015), May 15-16, 2015, School of Computing Science and Engineering, Galgotias University, Uttar Pradesh.

8. Track Topic: Communication Networks –I

Date : March 17, 2015.

2015 International Conference On Signal Processing And Communication, Jaypee Institute Of Information Technology, Noida, Uttar Pradesh, India.

Members in Technical Committee of Conference / Symposia / Seminar / Workshop

1. Organizing Committee Member, “3rd International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2023),” will be organized by Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Varanasi , INDIA. December 20 – 22, 2023.
2. Program Co-Chair, “Workshop on Applications of Computational Intelligence and Interactive Systems (WACIIS-2023),” August 18-19, 2023, organized by Centre for Artificial Intelligence, Banasthali Vidyapith, INDIA.
3. Organizing Committee Member, “2nd International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2022),” Organized by Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Varanasi , INDIA. December 22 – 24, 2022.
4. Organizing Committee Member, “1st International Conference on Advanced Network Technology and Intelligent Computing (ANTIIC-2021),” Organized by Dept. of Computer Science, Institute of Science, Banaras Hindu University (BHU), Varanasi, INDIA. December 22 – 24, 2021.
5. Member of local organizing committee: International conference of the Indian Mathematics Consortium in cooperation with American Mathematical Society (AMS), December 14 -17, 2016, organized by DST-CIMS, Institute of Science, Banaras Hindu University (BHU), Varanasi -221 005, INDIA.
6. Program chair: International conference on advanced computing networking and informatics (ICACNI), June 12 -14, 2013, Central Institute of Technology (CIT), Raipur, Chhattishgarh, INDIA.
7. Member of organizing committee: Advanced training programme on optimization and its applications, November 23 – 29, 2011, organized by DST-CIMS, Institute of Science, Banaras Hindu University (BHU), Varanasi -221 005, INDIA.
8. Member of executive committee: UGC sponsored national seminar on Impact of Physics on Biological Science, August 26, 2010, organized by Department of physics, Ewing Christian College (ECC), Allahabad, INDIA.