Sourav De

CONTACT INFORMATION	Department of Computer Science & Engineering Cooch Behar Government Engineering College Vill- Harinchawra, P.O.- Ghughumari Cooch Behar 736 170, India	*Voice:* (91) 9232795456 *Fax:* (91)(3582) 2330-40 *E-mail:* dr.sourav.de79@gmail.com

RESEARCH INTERESTS

Soft computing, pattern recognition, image processing, optimization, machine learning, big data

EDUCATION

Indian Institute of Engineering Science & Technology, Shibpur, Howrah, India

PhD., Computer Science & Technology, 2015

- Dissertation Topic: "Multilevel Image Segmentation using Soft Computing Techniques"

West Bengal University of Technology, Kolkata, India

Master of Engineering, Information Technology, 2005

The University Of Burdwan, Burdwan, India

Bachelor of Engineering, Information Technology, 2002

ACADEMIC EXPERIENCE

Cooch Behar Government Engineering College, Department of Computer Science & Engineering, Cooch Behar, INDIA

Associate Professor   **April, 2016 - present**
Duties include academics, research and supervising research scholars.

University Institute of Technology, Department of Computer Science & Information Technology, University of Burdwan, INDIA

Assistant Professor   **January, 2006 - March 2016**
Duties include academics and research.

Chandananagar CompuTech Academy, Chandannagar, Hooghly, INDIA

Lecturer   **September, 2002 - September 2003**
Duties include academics.

INDUSTRIAL EXPERIENCE

Apices Consultancy Services Pvt. Ltd., Kolkata, INDIA

Junior Programmer   **January, 2003 - December 2003**
Duties include software development.

ADMINISTRATIVE EXPERIENCE

Cooch Behar Government Engineering College, Department of Computer Science & Engineering, Cooch Behar, INDIA

Head of the Department **August, 2016 - present**
Successfully leading the department toward academic excellence and exploring opportunities for research/consultancy.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Coordinator of Procurement & Purchase Committee **December, 2016 - February, 2019**
Looked after the overall purchases of the institute.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Coordinator of Asset Monitoring & Staff Establishment Committee **March, 2018 - January, 2022**
Looked after the record keeping of the asset and staff establishment of the institute.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Academic-in-charge **16th August, 2016 - 02nd November, 2016**
Headed the institute; looked after the academics and administrative affairs.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Coordinator of Academic Committee **December, 2016 - February, 2018**
Looked after the overall academic activity of the institute.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Member of Academic Committee **March, 2018 - Present**
Looking after the overall academic activity of the institute.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Member of Anti-Ragging Squad **July, 2018 - Present**

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Member of IQAC Cell **March, 2019 - Present**

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Chairman of IT Infrastructure Review Committee **December, 2021 - Present**
Looking after the overall IT infrastructure of the college campus.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Member of Procurement Committee **March, 2022 - Present**
Looking after the overall purchases of the institute.

Cooch Behar Government Engineering College, Cooch Behar, INDIA

Member of Alumni Committee **March, 2022 - Present**
Looking after the alumni coordination of the institute.

PEER-REVIEWED
PUBLICATIONS IN
JOURNALS

1. Mainak Ghosh, Rishav Datta, Debarka Mukhopadhyay and **Sourav De**, "Development of Educational Management Architecture employing Smart contract and Randomized mining in Permissioned Blockchain Environment", *SN Computer Science*, Springer Nature. (Submitted)

2. Rudranath Banerjee, **Sourav De** and Shouvik Dey, "A Survey on various Deep Learning Algorithms for an Efficient Facial Expression Recognition Systems", *International Journal of Image and Graphics*, World Scientific, Dec 2021, DOI: https://doi.org/10.1142/S0219467822400058.

3. Rudranath Banerjee, **Sourav De** and Shouvik Dey, "WTAOF-ILPB based feature learning and LFSSOA-RBFNN based classification for facial micro-expression recognition", *Wireless Personal Communications*, Springer, DOI: https://doi.org/10.1007/s11277-021-08794-5.

4. Rudranath Banerjee, **Sourav De** and Shouvik Dey, "A Novel Facial Expression Recognition System using BMCSA based Adaptive Neuro-Fuzzy Inference System", *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, World Scientific, Vol. 29, No. 6, pp. 791–813, 2021.

5. Rik Das, Khusbu Kumari, **Sourav De**, P. K. Manjhi, Sudeep Thepade, "Hybrid descriptor definition for content based image classification using fusion of handcrafted features to convolutional neural network features", *International Journal of Information Technology*, 2021, https://doi.org/10.1007/s41870-021-00722-x .

6. Rik Das, **Sourav De**, Sudeep Thepade, "Machine Learning in Hybrid Environment for Information Identification with Remotely Sensed Image Data", *Transactions on Computational Science (TCSC)*, vol 11820, 2019.

7. Anupam Mukherjee, **Sourav De**, Siddhartha Bhattacharyya, "A Survey on Big Data: An Emerging Imparity and Revolution in Digital World", *International Journal of Hybrid Intelligence (IJHI)*, vol. 1, no.2/3, pp. 147 –162, 2019.

8. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Automatic Magnetic Resonance Image Segmentation by Fuzzy Intercluster Hostility Index Based Genetic Algorithm: An Application", *Applied Soft Computing*, vol. 47, pp. 669-683, 2016.

9. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty, "Color image segmentation using parallel OptiMUSIG activation function", *Applied Soft Computing*, vol. 12, no. 10, pp. 3228 - 3236, 2012.

10. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Efficient grey-level image segmentation using an optimised MUSIG (OptiMUSIG) activation function", *International Journal of Parallel, Emergent and Distributed Systems*, vol. 26, no. 1, pp. 1-39, 2010.

BOOK CHAPTERS

1. Prasenjit Dey, Sudip Kumar Adhikari, **Sourav De** and Rudranath Banerjee, "Applications of Internet of Things and Machine Learning Technologies in Healthcare", *Internet of Things based Machine Learning in Healthcare Technology and Applications* (eds P. Dey, S. K. Adhikari, S. De and C. Kar), CRC Press. (Accepted)

2. Sudip Kumar Adhikari, Prasenjit Dey, **Sourav De** and Shouvik Paul, "Medical Image Analysis using Swarm Intelligence: A Survey", *Recent Trends in Swarm Intelligence Enabled Research for Engineering Applications* (eds S. Bhattacharyya, M. Koeppen, D. De and B. K. Panigrahi), Elsevier Academic Press. (Accepted)

3. Shouvik Paul, **Sourav De** and Siddhartha Bhattacharyya, "Emerging Trends in Computational Swarm Intelligence: A Comprehensive Overview", *Recent Trends in Swarm Intelligence Enabled Research for Engineering Applications* (eds S. Bhattacharyya, M. Koeppen, D. De and B. K. Panigrahi), Elsevier Academic Press. (Accepted)

4. Soumyaratna Debnath, Abhirup Deb, **Sourav De**, and Sandip Dey, "Modified Harris Hawk Optimization Algorithm for Multi-level Image Thresholding", *Hybrid Computational Intelligent Systems: Modeling, Simulation and Optimization (1st ed.). CRC Press*, 2023, ISBN 9781003381167.

5. Soumit Roy, Rik Das, Rupal Bhargava, Ayush Gupta, and **Sourav De**, "Designing of a Solution Model for Global Warming and Climate Change using Machine Learning and Data Engineering Techniques", *Hybrid Computational Intelligent Systems: Modeling, Simulation and Optimization (1st ed.). CRC Press*, 2023, ISBN 9781003381167.

6. **Sourav De** and Rik Das, "An Overview of Applied Smart Health Care Informatics in context of Computational Intelligence", *Applied Smart Health Care Informatics: A Computational Intelligence Perspective* (eds S. De, R. Das, S. Bhattacharyya and U. Maulik), Wiley, Feb 2022, DOI: https://doi.org/10.1002/9781119743187.ch1.

7. **Sourav De**, Sandip Dey, Surbhi Bhatia and Siddhartha Bhattacharyya, "An Introduction to Data mining in Social Networks", *Advanced Data Mining Tools And Methods for Social Computing* (eds S. De, S. Dey, S. Bhattacharyya and S. Bhatia), Academic Press, pp. 1–25, 2022, DOI: https://doi.org/10.1016/B978-0-32-385708-6.00008-4.

8. Debanjan Konar, Siddhartha Bhattacharyya, **Sourav De**, Aparajita Das, Jan Platos, Sergey V. Gorbachev and Khan Muhammad, "Early Prediction of Coronavirus Epidemic Outbreak Using Stacked Long Short-Term Memory Networks", *Intelligent Modelling, Prediction, and Diagnosis from Epidemiological Data* (eds S. Bhattacharyya), CRC Press, pp. 81–96, 2021, DOI: 10.1201/9781003158684-5.

9. Sandip Dey, and **Sourav De**(eds. S. Bhattacharyya, M. Koppen, E. Behrman and I. Cruz), "An Introductory Illustration to Quantum Inspired Meta-heuristics", *Hybrid Quantum Meta-heuristics: Theory and Applications*, CRC Press, May 2022.

10. Chandrani Singh and **Sourav De** (eds. R. Das, S. Nandy and S. Bhattacharyya), "Applications of Generative Adversarial Network on Computer Aided Diagnosis", *Disruptive Trends in Computer Aided Diagnosis*, CRC Press, 2021, eBook ISBN: 9781003045816.

11. Sandip Dey, Debanjan Konar, **Sourav De** and Siddhartha Bhattacharyya (eds. T. Gandhi, S. Bhattacharyya, S. De, D. Konar and S. Dey), "An introductory illustration of medical image analysis", *Advanced Machine Vision Paradigms for Medical Image Analysis*, Elsevier, pp. 1–9, 2020.

12. Sandip Dey, Debanjan Konar, **Sourav De** and Siddhartha Bhattacharyya (eds. T. Gandhi, S. Bhattacharyya, S. De, D. Konar and S. Dey), "Conclusion and future research directions", *Advanced Machine Vision Paradigms for Medical Image Analysis*, Elsevier, pp. 273–277, 2020.

13. Sandip Dey, **Sourav De** and Siddhartha Bhattacharyya (eds. S. Bhattacharyya, I. Pan, A. Mani, S. De, E. Behrman and S. Chakraborty), "Introduction to quantum machine learning", *Quantum Machine Learning*, De Gruyter, pp. 1–10, 2020.

14. Rudranath Banerjee, **Sourav De** and Shouvik Dey (eds. Sourav De and Paramartha Dutta), "A Behavioural Model for Persons with Autism based on Relevant Case Study", *Computational Intelligence for Human Action Recognition, Taylor and Francis, CRC Press*, 21 pages, 2020.

15. **Sourav De**, Siddhartha Bhattacharyya and Sandip Dey (eds. Sourav De, Sandip Dey and Siddhartha Bhattacharyya), "Metaheuristic Algorithms in Fuzzy Clustering", *Recent Advances in Hybrid Metaheuristic for Data Clustering, John Wiley & Sons, UK*, pp. 1–17, 2020.

16. Sunanda Das, **Sourav De**, Siddhartha Bhattacharyya and Sandip Dey (eds. Sourav De, Sandip Dey and Siddhartha Bhattacharyya), "Magnetic Resonance Image Segmentation Using Quantum Inspired Modified Genetic Algorithm (QIANA) Based FRCM", *Recent Advances in Hybrid Metaheuristic for Data Clustering, John Wiley & Sons, UK*, pp. 129–150, 2020.

17. Rik Das, **Sourav De** and S. N. Singh (eds. Siddhartha Bhattacharyya, Indrajit Pan, Abhijit Das and Shibakali Gupta), "A Study of Recent Trends in Content Based Image Classification", *Intelligent Multimedia Data Analysis, De Gruyter, Germany*, pp. 65–93, February 2019.

18. Sandip Dey, **Sourav De** and Siddhartha Bhattacharyya (eds. Siddhartha Bhattacharyya), "Introduction to Hybrid Meta-heuristic", pp. 1–38, *Hybrid Metaheuristics: Research and Applications, World Scientific*, November 2018.

19. **Sourav De**, Madhumita Singha, Komal Kumari, Ritika Selot and Akshat Gupta (eds. R. Das, S. De and S. Bhattacharyya), "Dimension Reduction using Image Transforms for Content Based Feature Extraction", pp. 26 - 40, *Feature Dimension Reduction for Content-Based Image Identification, IGI Global*, June 2018.

20. Sunanda Das, **Sourav De** and Siddhartha Bhattacharyya (eds. S. Bhattacharyya), "True Color Image Segmentation using Quantum Induced Modified Genetic Algorithm based FCM Algorithm", pp. 55 - 94, *Quantum-Inspired Intelligent Systems for Multimedia Data Analysis, IGI Global*, April 2018.

21. **Sourav De**, Sunanda Das, Siddhartha Bhattacharyya and Paramartha Dutta (eds. S. Bhattacharyya, I. Pan, A. Mukherjee and P. Dutta), "Multilevel image segmentation using Modified Genetic Algorithm (MfGA) based Fuzzy C-means", *Hybrid Intelligence for Image Analysis and Understanding, Wiley*, August 2017, DOI: https://doi.org/10.1002/9781119242963.ch1.

22. **Sourav De** and Firoj Haque (eds. S. Bhattacharyya, H. Bhaumik, S. De and G. Klepac), "Multilevel image segmentation using modified particle swarm optimization", pp. 106 - 142, *Intelligent Analysis of Multimedia Information, IGI Global*, July, 2016.

23. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty (eds. S. Bhattacharyya, P. Banerjee, D. Majumdar and P. Dutta), "Multilevel & Color Image Segmentation by NSGA II based OptiMUSIG Activation Function", pp. 321 - 348, *Handbook of Research on Advanced Hybrid Intelligent Techniques and Applications, IGI Global*, November 2015.

24. **Sourav De**, and Siddhartha Bhattacharyya (eds. S. Bhattacharyya, P. Dutta and S. Chakraborty), "Color Magnetic Resonance Brain Image Segmentation by ParaOptiMUSIG activation Function: An Application", vol. 611, pp 185-214, *Hybrid Soft Computing Approaches: Research and Applications, Springer*, August 2015. DOI: http://link.springer.com/chapter/10.1007/978-81-322-2544-7_6

25. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty (eds. B. K. Tripathy and D. P. Acharjya), "Efficient Color Image Segmentation by a Parallel Optimized (ParaOptiMUSIG) activation Function", pp. 19-50, *Global Trends in Intelligent Computing Research and Development, IGI Global*, 2013.

26. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty (eds. S. Bhattacharyya and P. Dutta), "Multilevel Image Segmentation by a Multiobjective Genetic Algorithm Based OptiMUSIG Activation Function", vol. 1, pp. 122 - 162, *Handbook of Research on Computational Intelligence for Engineering, Science and Business, IGI Global*, 2012.

27. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, (eds. J. Mehnen, M. Koppen, A. Saad and A. Tiwari), "Multilevel Image Segmentation using OptiMUSIG Activation Function with Fixed and Variable Thresholding: A Comparative Study" in *Applications of Soft Computing: From Theory to Praxis, Advances in Intelligent and Soft Computing, Springer-Verlag, Berlin, Heidelberg*, pp. 53-62, 2009.

CONFERENCE PUBLICATIONS

1. Pratima Sarkar, **Sourav De**, and Sandeep Gurung, "Fish Detection from Underwater images using YOLO and its Challenges", *Bhattacharyya, S., Das, G., De, S., Mrsic, L. (eds) Recent Trends in Intelligence Enabled Research. DoSIER 2022. Advances in Intelligent Systems and Computing, vol 1446. Springer, Singapore*, 2022, pp. 149-159, doi: https://doi.org/10.1007/978-981-99-1472-2_13.

2. Arijit Nayak, **Sourav De**, Siddhartha Bhattacharyya, Debarka Mukhopadhyay, Khan Muhammad and Sergey Gorbachev, "Envisaging an Intelligent Blockchain Network by Intelligence Sharing", *2022 International Conference for Advancement in Technology (ICONAT2022)*, 2022, pp. 1-6, doi: 10.1109/ICONAT53423.2022.9725973.

3. Pratima Sarkar, **Sourav De**, and Sandeep Gurung, "A Survey on Underwater Object Detection", *2021 Third Doctoral Symposium on Intelligence Enabled Research (DoSIER 2021)*, In:

Bhattacharyya, S., Das, G., De, S. (eds) Intelligence Enabled Research. Studies in Computational Intelligence, vol 1029. Springer, Singapore. https://doi.org/10.1007/978-981-19-0489-9_8

4. Pratima Sarkar, Bijoyeta Roy, Mousumi Gupta, and **Sourav De**, "Melanoma Cell Detection by using K-means Clustering Segmentation and Abnormal Cell Detection technique", *2nd International Symposium on Computer Visison and Machine Intelligence in Medical Image Analysis 2021 (ISCMM 2021)*, Gupta, M., Ghatak, S., Gupta, A., Mukherjee, A.L. (eds) Artificial Intelligence on Medical Data. Lecture Notes in Computational Vision and Biomechanics, vol 37. Springer, Singapore. https://doi.org/10.1007/978-981-19-0151-5_16

5. Pratima Sarkar, Sandeep Gurung, and **Sourav De**, "Underwater Image Segmentation using Fuzzy based Contrast Improvement and Partition-based Thresholding Technique", *9th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2021)*, In: Bhateja, V., Tang, J., Satapathy, S.C., Peer, P., Das, R. (eds) Evolution in Computational Intelligence. Smart Innovation, Systems and Technologies, vol 267. Springer, Singapore. https://doi.org/10.1007/978-981-16-6616-2_46

6. Arijit Nayak, Deepraj Chowdhury, **Sourav De**, Siddhartha Bhattacharyya, Khan Muhammad and Sergey Gorbachev, "A Novel Intelligent Blockchain Framework With Intelligence Replication", *2021 Third International Conference on Advanced Computational and Communication Paradigms (ICACCP 2021)*, pp. 661–672, 2021. (DOI: 10.1007/978-981-16-4369-9_63)

7. Sandip Dey, **Sourav De** and Shouvik Paul, "A New Approach of Data Clustering Using Quantum Inspired Particle Swarm Optimization Based Fuzzy c-means", *2021 11th International Conference on Cloud Computing, Data Science & Engineering (Confluence-2021)* 2021, pp. 59-64, doi: 10.1109/Confluence51648.2021.9377105.

8. Sandip Dey, **Sourav De**, Abhirup Deb and Soumyaratna Debnath, "Multilevel Image Segmentation Using Modified Red Deer Algorithm", *2021 11th International Conference on Cloud Computing, Data Science & Engineering (Confluence-2021)*, 2021, pp. 362-368, doi: 10.1109/Confluence51648.2021.9377112.

9. **Sourav De**, Sandip Dey, Soumyaratna Debnath and Abhirup Deb, "A New Modified Red Deer Algorithm for Multi-level Image Thresholding", *2020 Fifth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2020)*, pp. 105–111, 2020.

10. Shouvik Paul, **Sourav De** and Sandip Dey, "Neighbourhood Based Bi-Level Contrast Adjustment for Underwater Image Enhancement Using Modified Particle Swarm Optimization", *2020 International Conference on Communication, Computing and Industry 4.0 (C2I4)*, 2020, pp. 1-6, doi: 10.1109/C2I451079.2020.9368902.

11. **Sourav De**, Sandip Dey and Shouvik Paul, "Underwater Image Enhancement Using Neighbourhood Based Two Level Contrast Stretching and Modified Artificial Bee Colony", *2020 IEEE 7th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON 2020)*, pp. 1-6, 2020 doi: 10.1109/UPCON50219.2020.9376405.

12. Shouvik Paul, **Sourav De** and Sandip Dey, "A Novel Approach of Data Clustering Using An Improved Particle Swarm Optimization Based K–Means Clustering Algorithm", *2020 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, pp. 1–6, 2020.

13. Rudranath Banerjee, Shouvik Dey and **Sourav De**, "A hybrid multi-layered PCA-Eigenfaces system for facial emotion recognition of persons with Autism", *International Conference on Emerging Trends in Engineering and Technology (ICETET 2019)*, pp. 73 - 77, March 2019.

14. Rik Das, **Sourav De**, Siddhartha Bhattacharyya, Jan Platos, Vaclav Snasel and Aboul Ella Hassanien, "Data Augmentation and Feature Fusion for Melanoma Detection with Content Based Image Classification", In: Hassanien A., Azar A., Gaber T., Bhatnagar R., F. Tolba

M. (eds) *14th International Conference on Advanced Machine Learning Technologies and Applications (AMLTA2019)*, AMLTA 2019, Advances in Intelligent Systems and Computing, vol 921, pp. 712–721, Springer, Cham, 2020.

15. Sandip Dey, **Sourav De**, Dhrubajyoti Ghosh, Siddhartha Bhattacharyya, Debanjan Konar and Jan Platos, "A Novel Quantum Inspired Sperm Whale Meta-heuristic for Image Thresholding ", *Second International Conference on Advanced Computational and Communication Paradigms (ICACCP 2019)*, pp. 1–7, February 2019.

16. Anupam Mukherjee, **Sourav De**, Siddhartha Bhattacharyya and Jan Platos, "Chicago Crime Data Analysis Using PIG in Hadoop", *Fourth IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2018)*, pp. 242 - 247, November 2018, doi=10.1109/ICRCICN.2018.8718725.

17. Anupam Mukherjee, **Sourav De** and Siddhartha Bhattacharyya, "Indian Crime Data Analysis in Hadoop Framework", *7th International Conference on Computing, Communication and Sensor Network (CCSN 2018)*, October 2018. (In Press)

18. Sachin Jadhav, Rik Das, Sudeep Thepade and **Sourav De**, "Applications of Hybrid Machine Learning for Improved Content Based Image Classification", *4th International Conference On Computing, Communication, Control And Automation*, pp. 1–6, August 2018.

19. Sunanda Das, **Sourav De**, Siddhartha Bhattacharyya and Aboul Ella Hassanien, "Color MRI Image Segmentation Using Quantum-Inspired Modified Genetic Algorithm-Based FCM". In: Bhattacharyya S., Mukherjee A., Bhaumik H., Das S., Yoshida K. (eds) *Recent Trends in Signal and Image Processing.* Advances in Intelligent Systems and Computing, vol 727, pp. 151–164, Springer, Singapore, May 2018.

20. Sunanda Das and **Sourav De**, "Multilevel Color Image segmentation using Modified Genetic Algorithm (MfGA) inspired Fuzzy C-Means Clustering", *Second IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2016)*, pp. 78 - 83, 2016.

21. Sunanda Das and **Sourav De**, "A Modified Genetic Algorithm based FCM Clustering Algorithm for Magnetic Resonance Image Segmentation", *Proceedings of the 5th International Conference on Frontiers in Intelligent Computing: Theory and Applications (FICTA)*, vol. 1, pp. 435-443, 2016.

22. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty, "Automatic Data Clustering by Genetic Algorithm Validated by Fuzzy Intercluster Hostility Index," *2014 Fourth International Conference of Emerging Applications of Information Technology (EAIT2014)*, pp. 58-63, 2014.

23. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty, "Application of Pixel Intensity Based Medical Image Segmentation Using NSGA II Based OptiMUSIG Activation Function," *2014 International Conference on Computational Intelligence and Communication Networks (CICN2014)*, pp. 262-267, 2014.

24. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty, "Color Image Segmentation by NSGA-II based ParaOptiMUSIG Activation Function", *2013 International Conference on Machine Intelligence Research and Advancement (ICMIRA-2013)*, pp.105-109, December 21-23, 2013.

25. **Sourav De**, Siddhartha Bhattacharyya, Susanta Chakraborty, B. N. Sarkar, P. K. Prabhakar and S. Bose, "Gray Scale Image Segmentation by NSGA-II based OptiMUSIG Activation Function", *International Conference on Communication Systems and Network Technologies (CSNT 2012)*, pp. 104-108, May 11-13, 2012.

26. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty, "True Color Image Segmentation by an Optimized Multilevel Activation Function" in Proceedings of 2010 IEEE International Conference on Computational Intelligence and Computing Research (2010 IEEE ICCIC), pp. 545-548, December 28 - 29, 2010.

27. **Sourav De**, Siddhartha Bhattacharyya and Susanta Chakraborty "A Genetic Algorithm based Automatic Image Clustering Technique Validated by Fuzzy Intercluster Hostility Index" in Proceedings of International Conference on Communication, Computers and Devices (ICCCD 2010), December 10-12, 2010.

28. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Automatic Clustering by DE Algorithm Validated by Fuzzy Intercluster Hostility Index" in Proceedings of International Conference on Emerging Trends in Computer Science, Communication and Information Technology (CSCIT2010), 2010.

29. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "A Differential Evolution Algorithm Based Automatic Determination of Optimal Number of Clusters Validated by Fuzzy Intercluster Hostility Index" in Proceedings of First IEEE International Conference on Advanced Computing (ICAC09), pp. 105-111, 2009.

30. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Automatic Image Clustering by Genetic Algorithm Validated by Fuzzy Intercluster Hostility Index and Classical DE: A Comparative Study", in Proceedings of National Conference on Ubiquitous Computing (NCUBQT 2009), pp. 12-17, 2009.

31. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Optimized Multilevel Image Segmentation: A Comparative Study" in Proceedings of IEEE National Conference on Computing and Communication Systems (CoCoSys-09), pp. 200-205, January 2009.

32. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "OptiMUSIG : An Optimized Gray Level Image Segmentor" in Proceedings of 16th International Conference on Advanced Computing and Communications (ADCOM 2008), pp 78-87, December 2008.

33. **Sourav De**, Siddhartha Bhattacharyya and Paramartha Dutta, "Multilevel Image Segmentation Using Variable Threshold based OptiMUSIG Activation Function", *Proceedings of National Conference on Nanotechnology and its Application in Quantum Computing (NAQC 2008)*, pp 44-51, September 2008.

34. **Sourav De**, Preetam De, Siddhartha Bhattacharyya and Paramartha Dutta, "Shape Factor Based Classification and Recognition of Similar Shaped Bangla Printed Consonant Characters", *Proceedings of National Conference on Recent Trends on Intelligent Computing (RTIC 2006)*, pp 101 - 106, November 2006.

PATENT

1. Rik Das, Abhishek Basu, Siddhartha Bhattacharyya, **Sourav De** and Nilanjan Dey, "An Image Feature Fusion Hardware System for Faster Convergence of Classification," Indian Patent No. 201831036280 dated 19.10.2018. (Published)

2. Siddhartha Bhattacharyya, Abhishek Basu, Subhrajit Sinha Roy, Prasun Chakrabarti, **Sourav De**, Debanjan Konar, Debabrata Samanta, Tulika Dutta, Sandip Dey and Debarka Mukhopadhayay, "A Microcontroller Based Low Cost Electronic Locking System Using 2-Way Authentication," Indian Patent No. 202041036194 dated 02.10.2020. (Published)

3. Siddhartha Bhattacharyya, Abhishek Basu, **Sourav De**, Jan Platoš, Vaclav Snasel, and Leo Mršić, "A Multilevel Image Segmentation Hardware," Patent Application No. 202131005895, 2021. (Published [India])

4. Siddhartha Bhattacharyya, Abhishek Basu, **Sourav De**, Jan Platoš, Vaclav Snasel, and Leo Mršić, "A Multilevel Image Segmentation Hardware," Australian Patent No. 2021101243 dated 10.04.2021. (Granted)

5. Siddhartha Bhattacharyya, Abhishek Basu, Subhrajit Sinha Roy, Prasun Chakrabarti, **Sourav De**, Debanjan Konar, Debabrata Samanta, Tulika Dutta, Sandip Dey, and Debarka Mukhopadhyay, "A Microcontroller Based Low-Cost Electronic Locking System Using 2-Way Authentication, " Australian Patent No. 2021101384 dated 17.04.2021. (Granted)

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	2. Soumyaratna Debnath, **Sourav De** and Siddhartha Bhattacharyya, "Picrypt - Inscribe Images with Encrypted Texts", Copyright Registration Number : L-117128/2022 dated 25.08.2022
	3. Abhishek Basu, Jitasmita Banerjee, Prasenjit Dey, **Sourav De** and Siddhartha Bhattacharyya, "Intelligent Plant Growth Monitoring" Copyright Registration Number : SW-16880/2023 dated 14.07.2023.

INVITED TALKS

1. Delivered an invited lecture on "Reference Formatting and Templates on Latex" in the **One Week Staff Development Program (SDP) on Technical Writing with LaTex (Phase I)** organized by the Department of Information Technology, RCC Institute of Information Technology, Kolkata, India on 25th July 2019.

2. Delivered an invited lecture on "Latex Referencing, Indexing, Hyperlinking and Preparing Bibtex, IDX Files" in the **Five day TEQIP-II sponsored National Level Faculty Development Program on LaTex: The Art of Technical Writing** organized by the Department of Information Technology, RCC Institute of Information Technology, Kolkata, India on 09th February 2017.

3. Delivered an invited lecture on "Genetic Algorithm and Multi-objective Genetic Algorithm" in the **Five day TEQIP-II funded National Level FDP on Recent Trends in Research and Research Methodology** organized by the Department of Information Technology, RCC Institute of Information Technology, Kolkata, India on 08th January 2014.

BOOKS AND PERIODICALS

1. Editor of **Recent Trends in Intelligence Enabled Research**, Publisher: Springer Nature Singapore; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, Rajnagar Mahavidyalaya, Birbhum, India, Prof. (Dr.) Gautam Das, Cooch Behar Government Engineering College, Cooch Behar, India, and Leo Mrsic, Algebra University College, Zagreb, Croatia; ISBN 978-981-99-1471-5; Publishing Date: June 2023.

2. Editor of **Intelligence Enabled Research**, Publisher: Springer Nature Singapore Pte Ltd.; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, Rajnagar Mahavidyalaya, Birbhum, India, and Prof. (Dr.) Gautam Das, Cooch Behar Government Engineering College, Cooch Behar, India; ISBN 978-981-19-0489-9; DOI: https://doi.org/10.1007/978-981-19-0489-9, Published Date: March 2022.

3. Editor of **Applied Smart Health Care Informatics: A Computational Intelligence Perspective**, Publisher: John Wiley & Sons, Ltd., UK; Co-editors: Prof. Rik Das, Xavier Institute Of Social Service, Ranchi, Jharkhand, India, Prof. (Dr.) Siddhartha Bhattacharyya, CHRIST (Deemed to be University), Bengaluru, Karnataka - 560029, India, Prof. (Dr.) Ujjwal Maulik, Jadavpur University, Kolkata, 700032, India, ISBN 9781119743170, Published Date: March 2022.

4. Editing of **Advanced Data Mining Tools and Methods for Social Computing**, Publisher: Elsevier; Co-editors: Sandip Dey, Sukanta Mahavidyalaya, Dhupguri, Jalpaiguri, India, Prof. (Dr.) Siddhartha Bhattacharyya, CHRIST (Deemed to be University), Bengaluru, Karnataka - 560029, India, Surbhi Bhatia, College of Computer Sciences and Information Technology, King Faisal University, Hofuf, Saudi Arabia, ISBN 978-0-323-85708-6, Published Date: 2022.

5. Editor of **Computational Intelligence for Human Action Recognition**, Publisher: Taylor and Francis, CRC Press; Co-editor: Prof.(Dr.) Paramartha Dutta, Department of Computer & System Sciences, Visva Bharati University, Santiniketan, West Bengal, India, ISBN 9780367184438, Published Date: 28 September, 2020.

6. Editor of **Advanced Machine Vision Paradigms for Medical Image Analysis**, Publisher: Elsevier; Co-editors: Dr. Tapan K Gandhi, Assistant Professor, Dept. of Electrical Engineering, Indian Institute of Technology, Delhi, India, Prof. (Dr.) Siddhartha Bhattacharyya, CHRIST (Deemed to be University), Bengaluru, Karnataka - 560029, India, Mr. Debanjan Konar, Department of Computer Science & Engineering, Sikkim Manipal Institute of Technology, Gangtok, Sikkim - 737136, India and Dr. Sandip Dey, Sukanta Mahavidyalaya, Dhupguri, Jalpaiguri, West Bengal, India, ISBN: 9780128192955, Published Date: 3rd August 2020.

7. Editor of **Recent Advances in Hybrid Metaheuristic for Data Clustering**, Publisher: John Wiley & Sons, UK; Co-editors: Dr. Sandip Dey, Sukanta Mahavidyalaya, Dhupguri, Jalpaiguri, West Bengal, India and Prof. (Dr.) Siddhartha Bhattacharyya, CHRIST (Deemed to be University), Bengaluru, Karnataka - 560029, India, ISBN-10: 1119551595, Published Date: 27 July 2020.

8. Editor of **Quantum Machine Learning**, Publisher: De Gruyter, Germany; Co-editors: Prof. Dr. Siddhartha Bhattacharyya, CHRIST (Deemed to be University), Bengaluru, Karnataka - 560029, India, Dr. Indrajit Pan, RCC, Institute of Information Technology, Canal South Road, 700015 Kolkata, India, Prof. Dr. Ashish Mani, Amity University, Dayal Niwas 101, Jairam Bagh, India, Dr. Elizabeth Behrman, Wichita State University, Dept of Mathematics Statistics & Physics, Wichita KS 67260-0033, 1845 Fairmount, USA and Dr. Susanta Chakraborti, IIEST, Indian Institute of Engineering, Botanic Garden, 711103 Shibpur, India, ISBN: 978-3-11-067064-6, Published: 08 Jun 2020.

9. Editor of **Emerging Trends in Disruptive Technology Management for Sustainable Development**, Publisher: Taylor and Francis, CRC Press; Co-editors: Dr. Rik Das, Dept. of Information Technology, Xavier Institute of Social Service, Ranchi, Jharkhand, India and Dr. Mahua Banerjee, Dept. of Information Technology, Xavier Institute of Social Service, Ranchi, Jharkhand, India, 2019.

10. Editor of **Machine Learning for Big Data Analytics**; Publisher: De Gruyter, Germany; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, Dr. Hrishikesh Bhaumik, RCC Institute of Information Technology, Kolkata and Dr. Anirban Mukherjee, RCC Institute of Information Technology, Kolkata, 2018. ISBN 978-3-11-055143-3

11. Editor of **Intelligent Multidimensional Data and Image Processing**; Publisher: IGI Global, Hershey, USA; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata and Prof. (Dr.) Paramartha Dutta, Visva-Bharati University, Santiniketan, 2018. ISBN13: 9781522552468, ISBN10: 1522552464, EISBN13: 9781522552475, DOI: 10.4018/978-1-5225-5246-8

12. Editor of **Feature Dimension Reduction for Content-Based Image Identification**; Publisher: IGI Global, Hershey, USA; Co-editors: Prof. Rik Das, Xavier Institute Of Social Service, Ranchi, Jharkhand and Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, 2018. ISBN13: 9781522557753, ISBN10: 152255775X, EISBN13: 9781522557760, DOI: 10.4018/978-1-5225-5775-3

13. Author of **Hybrid Soft Computing for Multilevel Image and Data Segmentation**; Publisher: Springer International Publishing AG, Cham, Switzerland; Co-Authors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, Prof. (Dr.) Susanta Chakraborty, Indian Institute of Engineering Science and Technology, Shibpur and Prof. (Dr.) Paramartha Dutta, Visva-Bharati University, Santiniketan; 2016; ISBN: 978-3-319-47523-3.

14. Editor of **Hybrid Soft Computing for Image Segmentation**; Publisher: Springer International Publishing AG, Cham, Switzerland; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, Prof. (Dr.) Paramartha Dutta, Visva-Bharati University, Santiniketan, and Dr. Goran Klepac, University College for Applied Computer Engineering, Croatia; 2016; ISBN: 978-3-319-47223-2.

15. Editor of **Intelligent Multidimensional Data Clustering and Analysis**; Publisher: IGI Global, Hershey, USA; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, Dr. Indrajit Pan, RCC Institute of Information Technology, Kolkata and Prof. (Dr.) Paramartha Dutta, Visva-Bharati University, Santiniketan; ISBN13: 9781522517764.

16. Editor of **Intelligent Analysis of Multimedia Information**; Publisher: IGI Global, Hershey, USA; Co-editors: Prof. (Dr.) Siddhartha Bhattacharyya, RCC Institute of Information Technology, Kolkata, Mr. Hrishikesh Bhaumik, RCC Institute of Information Technology, Kolkata, and Dr. Goran Klepac, University College for Applied Computer Engineering, Croatia; ISBN13: 9781522504986; DOI: 10.4018/978-1-5225-0498-6.

1. Editor of **Internet of Things based Machine Learning in Healthcare: Technology and Applications**, Publisher: Taylor and Francis, CRC Press; Co-editor: Dr. Prasenjit Dey, Department of Computer Science & Engineering, Cooch Behar Government Engineering College, Cooch Behar, West Bengal, India, dr. Sudip Kumar Adhikari, Cooch Behar Government Engineering College, Cooch Behar, West Bengal, India, and Mr. Indrajit Kar, Siemens Technology and Services Pvt Ltd. (To be published in 2024)

1. Participated in the **6th International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT 2020)** organized by IEEE Bangalore Section, Bangalore, India during 2nd to 4th July, 2020.

2. Attended and presented a paper at the **2014 Fourth International Conference of Emerging Applications of Information Technology (EAIT2014)** held at Indian Statistical Institute, Kolkata, India during December 19 to December 21, 2014.

3. Attended and presented a paper at the **2014 International Conference on Computational Intelligence and Communication Networks (CICN2014)** held at RCC Institute of Information Technology, Kolkata, India during November 14 to November 16, 2014.

4. Attended and presented a paper at the **2013 International Conference on Machine Intelligence Research and Advancement (ICMIRA-2013)** held at Shri Mata Vaishno Devi University(SMVDU), Katra, Jammu & Kashmir, India during December 21, 2013 to December 23, 2013.

5. Attended and presented a paper at the **2010 IEEE International Conference on Computational Intelligence and Computing Research (2010 IEEE ICCIC)** held at Tamilnadu College of Engineering, Coimbatore, Tamilnadu, INDIA during December 28 to December 29, 2010.

6. Attended and presented a paper at the **IEEE National Conference on Computing and Communication Systems (CoCoSys-09)**, held at University Institute of Technology during January 02 to January 04, 2009.

7. Attended and presented a paper at the **16th International Conference on Advanced Computing and Communication (ADCOM 2008)** held at Anna University Chennai, MIT Campus, Chennai, India during December 14 to December 17, 2008.

8. Presented online a paper at the **Applications of Soft Computing: From Theory to Praxis, Advances in Intelligent and Soft Computing**, Springer-Verlag, Berlin, Heidelberg, pp. 53-62, 2009.

9. Attended and presented a paper at the **National Conference on Nanotechnology And Its Application in Quantum Computing (NAQC 2008)** held at Government College of Engineering and Leather Technology, Kolkata, India during September 22 to September 24, 2008.

10. Attended and presented a paper at the **National Conference on Recent Trends in Intelligent Computing (RTIC 2006)** held at Kalyani Government Engineering College during November 17 to November 19, 2006.

11. Attended **TEQIP sponsored National Conference on "Data Mining & Knowledge Discovery - Identifying Potential Information"** held at Government College of Engineering and Textile Technology, Serampore, India during July 14th to July 15th, 2006.

PARTICIPATION IN
REFRESHER COURSE

1. Participated in **UGC sponsored 4th Refresher Course on "Information Communication Technology Application"** organized by Academic Staff College, The University of Burdwan, Burdwan, West Bengal from 06th March 2013 to 26th March 2013.

PARTICIPATION IN
ORIENTATION
PROGRAMME

1. Participated in **UGC sponsored 91st Orientation Programme** organized by Academic Staff College, The University of Burdwan, Burdwan, West Bengal from 04th July 2013 to 31st July 2013.

PARTICIPATION IN
FDP/
WORKSHOPS/
SEMINARS/
WEBINARS

1. Participated in a AICTE sponsored 6-Day Short Term Training Program (STTP) on **Quantum Computing And Its Application** organized by Maulana Abul Kalam Azad University of Technoloogy, West Bengal, India from 19-07-2021 to 24-07-2021.

2. Participated in the live webinar on **Quantum Mahine Learning: Application to Image Restoration** by DEpartment of Computer Science & Engineering, Mandsaur University, Mandsaur on 24th April 2021.

3. Participated in a AICTE-ISTE approved Orientation/Refresher Programme on **Cyber Security on Blockchain Technology** organized by KKR & KSR Institute of Technology & Sciences, Guntur, Andhra Pradesh from 25-03-2021 to 31-03-2021.

4. Participated in the live webinar on **Employability Post COVID Era: Expectation of Industry Vs Education Systems´ Preparedness** by ASSOCHAM on 11th July 2020.

5. Participated in the live webinar on **Remote Sensing: Latest Trends and Perspectives** by Computer Society of India, Student Branch, Assam University, Silchar in association with Dept. of Computer Science & Engineering, Assam University, Silchar on 04th July 2020.

6. Participated in the Live Webinar on **Two-Days Webinar on "Machine and Deep Learning with MATLAB"** by Sister Nivedita University, Kolkata, West Bengal, India on 3rd and 4th of July 2020.

7. Participated in the live webinar on **Recent Trends on COVID-19: Mathematical Modelings and their Social Impacts** by The Department of Mathematics & IQAC, Sri Gurudas Mahavidyalaya, Kolkata, West Bengal, 700067 on 30th June, 2020.

8. Participated in the Live Webinar on **Impact of IEEE Standards on IoT and 5G** by IEEE in collaboration with IEEE Rajasthan Sub-Section & Manipal University, Jaipur on 29th June 2020.

9. Participated in the live webinar on **Quantum, Data and Algorithms** by Computer Society of India, Student Branch, Assam University, Silchar in association with Dept. of Computer Science & Engineering, Assam University, Silchar on 28th June 2020.

10. Participated in the live webinar on **Trends in Computing** by CHRIST ACM Student Chapter and Department of Computer Science, CHRIST (Deemed University), Bangalore, India on 17th June, 2020.

11. Participated in a AICTE Training And Learning (ATAL) Academy Online FDP on **Quantum Computing** at Government College of Engineering, Thanjavur from 01-06-2020 to 05-06-2020.

12. Participated in the live webinar on **Need of Mathematical Cryptography and Digital Forensic in Current Society** by ADAMAS University on 30th May 2020.

13. Participated in the Live Webinar on **Pandemic Disease Vs Sustainable Management** by Pearson India on 29th May 2020.

14. Participated in the Live Webinar on **Role of Smart Grid in Facilitating the integration of Renewables** by IEEE, India Council on 24th May 2020.

15. Participated in the Live Webinar on **Quantum Inspired Soft Computing: Application to Prediction of Environmental Hazards** by JIS College of Engineering, West Bengal, India on 19th May 2020.

16. Participated in a AICTE Training And Learning (ATAL) Academy Online FDP on **Artificial Intelligence** at Indian Institute of Information Technology, Vadodara from 11-05-2020 to 15-05-2020.

17. Participated in the Live Webinar on **How To Publish a High Quality Technical Journal Paper** by IEEE on 24th April 2020.

18. Participated in a Short Term Training Programme on **Introduction to Soft Computing** organized by National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata from January 14 to January 25, 2019.

19. Participated in One Week Short Term Training Program on **Machine Learning & Its Application** organized by National Institute of Technical Teacher's Training & Research, Kolkata from 09th July 2018 to 13th July 2018, held at Cooch Behar Government Engineering College, Cooch Behar.

20. Participated in a Short Term Training Programme on **Image Processing using MATLAB** organized by National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata from June 19 to June 30, 2017.

21. Participated in a Workshop on **Big Data Analytics** co-organized by ACM Student Chapter, ISI Kolkata and Indian Statistical Institute from August 20 to August 21, 2015.

22. Participated in a TEQIP sponsored One Week Management Development Programme (MDP) on **Total Quality Management (TQM) in Technical & Higher Education** organized by University Institute of Technology, The University of Burdwan, from August 05 to August 9, 2013.

23. Participated in a AICTE sponsored Staff Development Programme on **Pattern Recognition: Principles and Application** organized by the department of Computer Science & Engineering, Kalyani Government Engineering College, Kalyani, West Bengal from June 7 to June 19, 2010.

24. Participated in a TEQIP sponsored 5-Days Workshop on **Challenges in VLSI Design: Cutting-edge Perspective** organized by the Department of Information Technology in collaboration with the School of VLSI Technology of Bengal Engineering and Science University, Shibpur, Howrah, India from July 21 to July 25, 2008.

25. Participated in a IEEE Gold Affinity Group, IEEE Calcutta section, CSE Department(TEQIP) and Computer Jagat sponsored one day Conference Tutorial on **2nd National Conference on Recent Trends in Information Systems (ReTIS-08)** organized by Computer Science & Engineering Department, Jadavpur University, West Bengal on 07th February, 2008.

26. Participated in a TEQIP sponsored Colloquium on **IMPACT: Of Images, Patterns, and Architectures in the Digital Era** organized by Department of Computer Science and Technology and Department of Information Technology of Bengal Engineering and Science University, Shibpur, Howrah, India from November 14 to November 16, 2007.

27. Participated in a Workshop on **Java and Web Technology** organized by the Department of Computer Science & Engineering of MCKV Institute of Engineering, Liluah, Howrah, W.B. from June 20 to June 22 2007.

28. Participated in a State Level Seminar on **Application of Cryptology in Industry and Cryptanalysis** organized by Department of Information Technology, RCC Institute of Information Technology held at C. V. Raman Hall, Science City, Kolkata on May 05, 2007.

29. Participated in a TEQIP sponsored One Day Seminar on **Recent Tools in Soft Computing** organized by the Department of Information Technology, Kalyani Government Engineering College, Kalyani on December 20, 2006.

30. Participated in a Retraining of College teachers under UGC Sponsored "University with Potential Excellence Scheme" course on **Operating system** organized by Jadavpur University, Kolkata on December December 07, 2006.

31. Participated in a National Seminar on **Data Mining & Knowledge Discovery - Identifying Potential Information** organized by Network Implementation Committee, TEQIP, Govt. College of Engineering and Textile Technology, Serampore, India from July 14 - July 15 , 2006.

32. Participated in a TEQIP sponsored one day workshop on "Cryptography-Yesterday, Today and Tomorrow" organized by the Department of Computer Science & Engineering, Kalyani Government Engineering College, Kalyani on June 07, 2006.

33. Participated in a course entitled on "Object-Oriented Analysis and design using the UML with Fundamentals of Rational Rose" organized by University Institute of Technology, The University of Burdwan, Burdwan, W.B., from March 18, 2006 to March 22, 2006.

CONFERENCES & SHORT-TERM COURSES ORGANIZED/ POSITION HELD

1. Acted as General Chair in 2023 Fifth Doctoral Symposium on Intelligence Enabled Research (DoSIER 2023) held at Cooch Behar Government Engineering College, Cooch Behar, India on December 20–21, 2023.

2. Acted as General Chair in 2022 Fourth Doctoral Symposium on Intelligence Enabled Research (DoSIER 2022) held at Cooch Behar Government Engineering College, Cooch Behar, India on December 22–23, 2022.

3. Acted as the member of Technical Chair in the International Conference on Intelligent Systems and Human Machine Collaboration (ICISHMC 2022) organized by K.C. College of Engineering and Management Studies and Research, Thane, Maharashtra during July 08–09, 2022.

4. Acted as the Session Chair of "Technical Session I" held on 11th December, 2021 in the 2021 Sixth International Conference on Computational Intelligence and Communication Networks (ICRCICN 2021) organized by Rajnagar Mahavidyalaya, Birbhum, India in association with Acuminous Research Foundation (AcuminoR) during December 11 to December 12, 2021.

5. Acted as General Chair in 2021 Third Doctoral Symposium on Intelligence Enabled Research (DoSIER 2021) held at Cooch Behar Government Engineering College, Cooch Behar, India on November 12–13, 2021.

6. Acted as Session Chair of "Keynote 2" held on 12th November 2021 in 2021 Third Doctoral Symposium on Intelligence Enabled Research (DoSIER 2021) held at Cooch Behar Government Engineering College, Cooch Behar, India on November 12–13, 2021.

7. Acted as the Session Chair of "Track-IV: Computer Vision and Image Processing" held on 23rd March, 2021 in the Third International Conference on Advanced Computational and Communication Paradigms(ICACCP - 2021) held at Sikkim Manipal Institute of Technology (SMIT) on February 22–24, 2021.

8. Convener in One day International Level Webinar on "Adoption of Disruptive Plan For Industry 4.0: Bridging Industry Academia Gap" in by the Department of Computer Science & Engineering, Cooch Behar Government Engineering College on November 28, 2020.

9. Convener in One day National Level Webinar on "Introdution to Quantum Computing" in by the Department of Computer Science & Engineering, Cooch Behar Government Engineering College on October 14, 2020.

10. Acted as the Session Chair held on 16th October, 2020 in the International E-Conference on Emerging Technologies (IECET-2020) held at Surendra Institute of Engineering & Management, Siliguri, India on October 16–17, 2020.

11. Acted as the Session Chair held on 12th August, 2020 in the 2020 Second Doctoral Symposium on Intelligence Enabled Research (DoSIER 2020) held at Visva Bharati University, Santiniketan, India on August 12–13, 2020.

12. Acted as the Session Chair of "VLSI Track" held on 15th January, 2020 in the International Conference on Frontiers in Computing and Systems (COMSYS-2020) held at Jalpaiguri Government Engineering College (JGEC) on January 13–15, 2020.

13. Acted as the Session Chair of "Computer Vision and Image Processing (Track-V)" held on 26th February, 2019 and "Computational Intelligence (Track-VI)" held on 27th February, 2019 in the Second International Conference on Advanced Computational and Communication Paradigms(ICACCP - 2019) held at Sikkim Manipal Institute of Technology (SMIT) on February 25–28, 2019.

14. Acted as the Judge for the Technical Session of Engineering discipline (Track-1) 3rd Regional Science & Technology Congress, 2018 (WEST BENGAL, NORTHERN REGION) (RSTC2018) held at Jalpaiguri Government Engineering College, Jalpaiguri on December 12–13, 2018.

15. Acted as the Session Chair of "Track-VI" in the Fourth IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2018) held at RCC Institute of Information Technology, Kolkata on November 23, 2018.

16. Served as Local Coordinator in One Week Short Term Training Program on "Machine Learning & Its Application" in collaboration with National Institute of Technical Teacher's Training & Research, Kolkata from 09th July 2018 to 13th July 2018 at Cooch Behar Government Engineering College, Cooch Behar.

17. Acted as the Session Chair of "Track-V (AISC): Computer Vision and Image Processing" in the First International Conference on Advanced Computational and Communication Paradigms (ICACCP-2017) held at Sikkim Manipal Institute of Technology (SMIT) on September 09, 2017.

18. Acted as the Reportier of "Track - VI: Computational Intelligence" in Third IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2017) held at RCC Institute of Information Technology, Kolkata on November 05, 2017.

19. Convener in One day Seminar on "Internet of Things in Cloud platform" in Technical Collaboration with IEEE YOUNG PROFESSIONAL AFFINITY GROUPS , KOLKATA SECTION by the Department of Computer Science & Engineering, Cooch Behar Government Engineering College on April 12, 2017.

20. Convener in TEQIP-II sponsored One day Workshop on "Disaster Management" in association with Maulana Abul Kalam Azad University of Technology, W. B. and in Technical Collaboration with IEEE YOUNG PROFESSIONAL AFFINITY GROUPS , KOLKATA SECTION at Cooch Behar Government Engineering College on March 29, 2017.

21. Coordinator in "National Network Security Championship - India" in association with ACM IIT Delhi at University Institute of Technology, The University of Burdwan, Burdwan from 22nd - 23rd March, 2014.

MEMBERSHIPS OF SCIENTIFIC AND PROFESSIONAL SOCIETIES

1. Senior Member of IEEE, USA (Membership No. 90326534)

2. Member of Association for Computing Machinery (Membership No. 2387304)

3. Member of The Institution of Engineers (India) (Membership No. M-1585120)

4. Member of Computer Science Teachers Association (CSTA) (Membership No. 6912724.)

5. Life Member of Indian Society for Technical Education (Membershp no.- LM 55442)

6. Member of the International Association of Engineers (IAENG), Hong Kong (Membership no.- 64752)

7. Member of International Association of Engineers (Hong Kong) Societies of:

   - Artificial Intelligence
   - Bioinformatics
   - Computer Science
   - Imaging Engineering

8. Member of International Engineering and Technology Institute (IETI).

POSITIONS OF AUTHORITY HELD

Member of the Technical Proceedings & Publication Committee of IEEE National Conference on Computing & Communication , Jan 2-4, 2009 organized by UIT, The University of Burdwan.

Reviewer of Handbook of Research on Computational Intelligence for Engineering, Science and Business, IGI Global.

Reviewer of Global Trends in Knowledge Representation and Computational Intelligence, IGI Global.

Reviewer of Handbook of Research on Swarm Intelligence in Engineering, IGI Global.

Reviewer of Hybrid Soft Computing: Research and Applications; Publisher: Springer, India Pvt. Ltd.

Reviewer of Applied Soft Computing, Elsevier B. V. from 2015 to 2019.

Reviewer of International Journal of Computers and Applications since 2015.

Reviewer of Intelligent Analysis of Multimedia Information, IGI Global.

Reviewer of Intelligent Multidimensional Data Clustering and Analysis, IGI Global.

Member of the Technical Program Committee in IEEE International Conference on Computational Intelligence and Communication Networks (ICCICN 2014) held on 14-16 November, 2014 at Kolkata, India.

Member of the Technical Program Committee in International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2015) held during November 20 to November 22, 2015 at RCC Institute of Information Technology, Kolkata, India.

Member of the Technical Program Committee in INDIA-2015, IC3T-2015, ICICT-2015, IC4SD-2015 and ICTIS-2015 in the year 2015.

Member of the Technical Program Committee in Sixth International Conference on Communication Systems and Network Technologies (CSNT 2016) held on 05-07 March, 2016 at Chandigar, India.

Reviewer in Third International Conference on Information systems Design and Intelligent Applications (INDIA-2016) held on 08-09 January, 2016 held at Visakhapatnam, India.

Reviewer in First International Conference on Data Engineering and Communication Technology (ICDECT-2016) held on 10-11 March, 2016 held at Pune, India.

Member of the Technical Program Committee in Second International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2016) held during September 23 to September 25, 2016 at RCC Institute of Information Technology, Kolkata, India.

Acted as Editorial Board Member in International Journal of Hybrid Intelligence; Inderscience.

Member of the Technical Program Committee in IEEE International Conference on Advanced Computational and Communication Paradigms - 2017 (ICACCP-2017) held during September 08-10, 2017 at Sikkim Manipal Institute of Technology, Sikkim, India.

Member of the Technical Program Committee in 7th International Conference on Communication Systems and Network Technologies (CSNT-2017) held during November 11-13, 2017 at Indian Institute of Information Technology (IIIT), Nagpur, India.

Member of the Technical Program Committee in 9th International Conference on Computational Intelligence and Communication Networks (CICN-2017) held during September 16-17, 2017 at Final International University, Cyprus.

Member of the Technical Program Committee in Third International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2017) held during November 03-05, 2017 at RCC Institute of Information Technology, Kolkata, India.

Member of the Technical Program Committee in First International Symposium on Signal and Image Processing (ISSIP 2017) held during November 01-02, 2017 at RCC Institute of Information Technology, Kolkata, India.

Reviewer of International Journal of Computers and Applications, Taylor & Francis.

Member of the Technical Program Committee in Fourth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2018) held during November 22-23, 2018 at RCC Institute of Information Technology, Kolkata, India.

Member of the Technical Program Committee in Second International Symposium on Signal and Image Processing (ISSIP 2018) held during November 21-22, 2018 at RCC Institute of Information Technology, Kolkata, India.

Member of the Technical Program Committee in IEEE Second International Conference on Advanced Computational and Communication Paradigms - 2019 (ICACCP-2019) held during February 25–28, 2019 at Sikkim Manipal Institute of Technology, Sikkim, India.

Member of the Technical Program Committee in First International Symposium on Computer Vision and Machine Intelligence in Medical Image Analysis (ISCMM-2019) held during February 26–27, 2019 at Sikkim Manipal Institute of Technology, Sikkim, India.

Member of the Technical Program Committee in eHaCON2019 International Ethical Hacking Conference held during August 22–25, 2019 at Institute of Engineering & Management, Kolkata, India.

Member of the Technical Program Committee in 5th International Conference on Fuzzy Systems and Data Mining (FSDM2019) held during October 18–21, 2019 at Kitakyushu International Conference Center, Kitakyushu City, Japan.

Member of the Technical Program Committee in First Doctoral Symposium on Intelligence Enabled Research (DoSIER 2019) held during October 19–20, 2019 at RCC Institute of Information Technology, Kolkata, India.

Member of the Technical Program Committee in International Conference on Frontiers in Computing and Systems (COMSYS-2020) held during January 13–15, 2020 at Jalpaiguri Government Engineering College, Jalpaiguri, West Bengal, India.

Editor of Applied Soft Computing, Elsevier B. V. since 2020.

Reviewer of Applied Intelligence, Springer from 2019.

Reviewer of Evolutionary Intelligence, Springer from 2019.

Reviewer of International Journal of Automation and Computing, Springer from 2019.

Reviewer of Computer Methods in Biomechanics and Biomedical Engineering Imaging & Visualization, Taylor & Francis from 2020.

Reviewer of International Journal of Automation and Computing, Taylor & Francis from 2019.

Member of the Technical Program Committee in Second Doctoral Symposium on Intelligence Enabled Research (DoSIER 2020) to be held during August 12–13, 2020 at Visva-Bharati University, Santiniketan, India.

Member of the Technical Program Committee in Fifth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2020) held during November 26-27, 2020 at CHRIST (Deemed to be University), Bangalore, India.

Member of the Technical Program Committee in Third International Symposium on Signal and Image Processing (ISSIP 2020) to be held during October 21-22, 2020 at Algebra University College, Zagreb, Croatia.

Member of the Technical Program Committee in IEM-ICDC 2020: International Conference on Computational Intelligence, Data Science and Cloud Computing to be held during September 25–27, 2020 at Institute of Engineering & Management (IEM), Kolkata, India.

Member of the Technical Program Committee in eHaCON2019 International Ethical Hacking Conference to be held during October 9–10, 2020 at Institute of Engineering & Management (IEM), Kolkata, India.

Member of the Advisory Committee in International E-Conference on Emerging Technologies (IECET-2020) held at Surendra Institute of Engineering & Management, Siliguri, India on October 16–17, 2020.

Member of the Technical Program Committee in 2021 Third International Conference on Advanced Computational and Communication Paradigms - 2021 (ICACCP-2021) held during March 22–24, 2021 at Sikkim Manipal Institute of Technology, Sikkim, India.

Member of the Technical Program Committee in International Conference on Frontiers in Computing and Systems (COMSYS-2021) held during September 29– October 01, 2021 at Department of Electronics & Communication Engineering and Department of Information Technology, North-Eastern Hill University (A Central University), Shillong, Meghalaya, India.

Member of the Technical Program Committee in Third Doctoral Symposium on Intelligence Enabled Research (DoSIER 2021) to be held during November 12–13, 2021 at Cooch Behar Goverment Engineering College, Cooch Behar, India.

Member of the Technical Program Committee in Sixth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2021) held during December 11–12, 2021 at Rajnagar Mahavidyalaya, Birbhum, India.

Member of the Technical Program Committee in the 1st International Conference on Human-Centric Smart Computing (ICHCSC 2022) held in New Delhi, India during April 27–29, 2022.

Member of the Technical Program Committee in the International Conference on Intelligent Systems and Human Machine Collaboration (ICISHMC 2022) organized by K.C. College of Engineering and Management Studies and Research, Thane, Maharashtra during July 08–09, 2022.

Member of the Technical Program Committee in International Conference on Frontiers in Computing and Systems (COMSYS-2022) held during December 19–21, 2022 at Department of Computer Science & Engineering, Indian Institute of Technology Ropar, Punjab, India and COMSYS Educational Trust, Kolkata, India.

Member of the Technical Program Committee in International Conference on Frontiers in Computing and Systems (COMSYS-2023) will be held during October 16–17, 2023 at School of Computing and Electrical Engineering (SCEE), Indian Institute of Technology Mandi, Himachal Pradesh, India and COMSYS Educational Trust, Kolkata, India.

OTHER ACADEMIC AND ADMINISTRATIVE DUTIES	Acted as the **External examiner** for B. Tech. Seventh Semester Project Presentation Examination for Computer Science & Engineering of Jalpaiguri Government Engineering College on May 15, 2019.

Acted as the **External examiner** for B. Tech. Seventh Semester Project Presentation Examination for Computer Science & Engineering of Jalpaiguri Government Engineering College on November 29–30, 2018.

Acted as the **External examiner** for B. Tech. Practical Examinations for Information Technology 1st year and 3rd year of RCC Institute of Information Technology in 2015.

Acted as the **External examiner** for B. Tech. Practical Examinations for Information Technology 1st year and 3rd year of RCC Institute of Information Technology in 2014.

Acted as the **External examiner** for B. Tech. Project Seminar for Information Technology 4th year of RCC Institute of Information Technology in 2014.

Acted as the **Head Examiner** of Information Technology for the B. E. Even Semester Examination, 2013-14 of The University of Burdwan, Burdwan.

Acted as the **Head Examiner** of Information Technology for the B. E. Even Semester Examination, 2010-11 of The University of Burdwan, Burdwan.

Acted as the **Head Examiner** of Information Technology for the B. E. Odd Semester Examination, 2006-07 of The University of Burdwan, Burdwan.

Acted as the **Member** of Under-Graduate Board of Studies of The University of Burdwan, Burdwan from March 2006 to March 2016.

Acted as the **Member** of the Departmental Academic Affairs committee in University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of the Departmental Syllabus committee in University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of the Departmental NBA committee in the Department of Information Technology, University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of the Departmental Laboratory Maintenance Committee: **Faculty in Charge** of Sir J. C. Bose Computer Lab in University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of the Students Welfare & Sports Cell of University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of TEQIP Academic Unit of University Institute of Technology, The University of Burdwan, Burdwan.

Acted as the **Member** of the Examination cell of University Institute of Technology, The University of Burdwan, Burdwan from June 2010 to May 2011.

Acted as the **Member** of coordination committee One Week National Level Staff Development Program on "Soft Computing" from 01st - 05th July 2013.

REFERENCES

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Cooch Behar, India
November 22, 2023

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Sourav De