

## **Dr Sujata Dash**

*Professor, IEEE Senior Member*

*Dept. of Information Technology*

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### **Academic Experience**

- ✚ Visiting Professor at the University of Manitoba, Canada, from April 2017 to August 2017.
- ✚ Worked as Associate Professor, Maharaja North Orissa University, Baripada, from 21st August 2014 to 15<sup>th</sup> May 2023.
- ✚ Worked as Professor and Dean of Research at Gandhi Institute for Technology, Bhubaneswar, and Odisha, India, from 1st August 2012 to 20<sup>th</sup> August 2014
- ✚ Worked as Principal, KMBB College of Engineering and Technology, Bhubaneswar, Odisha, India from 1st February 2011 to 30th July 2012
- ✚ Worked as Professor & Head of the Computer Science Department, Orissa Engineering College, Bhubaneswar, Odisha, India from 14th October 2008 to 31st January 2011
- ✚ Worked as Professor & Head of Computer Science Department, Synergy Institute of Engineering & Technology, Dhenkanal, Odisha, India from 1st August 2006 to 10th October 2008
- ✚ Worked as Professor of Computer Science and IT Department of GIET, Gunupur, Odisha, India from 8th September 2004 to 25th July 2006
- ✚ Worked as Professor & Principal in-charge of Computer Science & IT Dept. Koustav institute of Self-Domain, Bhubaneswar, Orissa, India from 4th June 2002 to 31st August 2004
- ✚ Worked as Associate Professor & Head of Computer Science & IT Dept in KIITS, Bhubaneswar. Odisha, India from 10th April 2001 to 31st May 2002
- ✚ Worked as Associate Professor in Gayatri Vidhya Parishad College of Engineering, Visakhapatnam, India (affiliated to Jawaharlal Nehru Technological University) in Computer science and IT Dept., from 11th February '99 to 4th April 2001
- ✚ Worked as Head of the Department of Computer Science handling MCA and M.Sc. Computer Science, Pydah P.G. College, Visakhapatnam Under Andhra University, India from 5th September 1997 to 31st January 1999
- ✚ Worked as Faculty at Polytechnic College of Engineering under Government of Odisha, India (Technical Education Department) in Computer Science Department

from 1st August 1989 to 30th August 1997

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## Education

- ✚ Post Doc in Computer Science from the University of Manitoba, Canada
- ✚ Ph.D. in Mathematics (Computational Modelling in Dusty Fluid) Degree from Berhampur University, Odisha, India, in 1995
- ✚ MTech in Computer Science & Engineering from CMJ University, Meghalaya, India, in 2012
- ✚ Master's Degree in Statistics (M.Sc.) from Sambalpur University, Odisha, India, in 1987  
SPECIALISATION: Operation Research, Stochastic Process  
Obtained 1st Class and ranked 2'nd Position in the University
- ✚ P.G. Diploma in Computer Application (18 months course) from Department of Electronics, Government of India, in 1985-87, obtained First Class.
- ✚ Advanced Diploma in Bio-Informatics from OCIMUM BIO-SOLUTION LIMITED, Hyderabad (Affiliated to University of Alabama, Huntsville.) (July 2003 -Jan 2004)

## Research Interest

Machine Learning, Evolutionary Computing, Data Mining, Bioinformatics, Artificial Intelligence, Cloud Computing, and IoT

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## Total Research Publications

- ✚ International Journals: 67
- ✚ Book Chapters: 40
- ✚ Edited Book: 17
- ✚ Book Series: 02
- ✚ Book: 3
- ✚ Patents published -08, Filed - 02
- ✚ International and National Conferences: 55

## Research Guidance

Ph. D. Awarded - 05  
Continuing -06  
M.Phil. Awarded - 10  
M. Tech. Awarded: 15  
MCA/M.Sc. Theses: 75  
B. Tech./B. Sc. Theses: 100

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## Journal Publications

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1. B. Sahu, Sujata Dash, Optimal feature Selection from high-dimensional microarray dataset employing hybrid IG-Jaya model, *Current Materials Science*, ISSN: 2666-1462, DOI:10.2174/2666145416666230124143912, SCI, Scopus indexed. (Accepted on 23<sup>rd</sup> Nov 2022)
2. Sujata Dash, Sourav Kumar Giri and Subhendu Kumar Pani, Saurav Mallik,\* and Mingqiang Wang, A Novel Hybrid Deep Learning-based Smart Healthcare Application using CNN-LSTM, CNN-Bi-LSTM and CNN-GRU for Early Detection of COVID-19, *Current Bioinformatics Journal*, Bentham Science, ISSN: 1574-8936, 2023. Indexed: SCI, Scopus, IF: 4.85 (Accepted)
3. Prabodh Kumar Sahoo, Priyadarshi Kanungo, Satyasis Mishra, Ganapati Panda, Sujata Dash, Development and Performance Evaluation of Mode-based Gaussian Mixture Model for Slow Moving Object Detection, *SN Computer Science*, ISSN: 2661-8907, 2023. (Accepted) Indexed: Scopus, DBLP, IF-1.29
4. Sujata Dash, S. K. Giri, C. Chakraborty, S. Kumar, Explainable Hybrid Health Care System for Early Assessment of Pandemics, *IEEE Intelligent Systems*, ISSN: 15411672, 2023. (Accepted) Indexed: SCI, Scopus, IF-6.744.
5. Ahmed, M.I.B., Alotaibi, S., Atta-ur-Rahman, Sujata Dash, Majed Nabil & Abdullah Omar AlTurki, A Review on Machine Learning Approaches in Identification of Pediatric Epilepsy. *SN COMPUT. SCI.* 3, 437 (2022). <https://doi.org/10.1007/s42979-022-01358-9>, Springer, ISSN: 2661-8907, ACM Digital Library, Google Scholar, Scopus, IF:1.29
6. S. Dash, C. Chakraborty, S. K. Giri, S. K. Pani, "Intelligent Computing on Time-Series Data Analysis and Prediction of Covid-19 Pandemics", *Pattern Recognition Letters*, Elsevier, vol.151, pp.69-75, 2021, ISSN 0167-8655, [doi.org/10.1016/j.patrec.2021.07.027](https://doi.org/10.1016/j.patrec.2021.07.027), IF: 5.67.
7. S. Dash, C. Chakraborty, S. K. Giri, S. K. Pani, J. Frnda, "BIFM: Big-Data Driven Intelligent Forecasting Model for COVID-19", in *IEEE Access*, vol.9, pp. 97505-97517, 2021, doi:10.1109/ACCESS.2021.3094658. IF: 3.476
8. Ibrahim, N.M., Gabr, D.G.I., Rahman, Au., Dash, S. et al. A deep learning approach to intelligent fruit identification and family classification. *Multimedia Tools Application* (2022). Volume 81, Issue 19, Aug 2022, pp 27783–27798, <https://doi.org/10.1007/s11042-022-12942-9> Springer, ISSN: 13807501, 14321882, Impact Factor: 2.60.

9. Nazar Abbas Saqib, Asiya Abdus Salam, Atta-Ur-Rahman & Sujata Dash (2021) Reviewing risks and vulnerabilities in web 2.0 for matching security considerations in web 3.0, *Journal of Discrete Mathematical Sciences and Cryptography*, 24:3, 809-825, DOI: 10.1080/09720529.2020.1857903, ESCI, SCOPUS, ISSN 0972-0529 (Print), ISSN 2169-0065 (Online), IF-0.767
10. Najla Al-Taleb, Nazar Abbas Saqib, Atta-ur-Rahman, Sujata Dash, *Cyber Threat Intelligence for Secure Smart City*, *Cryptography and Security*, arXiv:2007.13233 [cs.CR], 2020.
11. M. Panda, S. Dash, A. Nayaar, R. Majid, M. Bilal, *Test Suit Generation for Object Oriented Programs Using Hybrid Firefly Algorithm*, *IEEE Access*, vol.8, pp. 179167-179188, 2020, DOI: 10.1109/ACCESS.2020.3026911, online ISSN: 2169-3536, IF- 4. 098, Scopus, SCIE indexed
12. Rahman, A., Dash, S. & Luhach, A.K., *Dynamic MODCOD and power allocation in DVB-S2: a hybrid intelligent approach*. *Telecommunication Systems* (2020) <https://doi.org/10.1007/s11235-020-00700-x>, 1572-9451, Springer, SCIE Indexed, SCOPUS, IF-1.707
13. A. Rahman, S. Dash, A. K. Luhach, N. Chilamkurti, S. Baek & Y. Nam, *A Neuro-Fuzzy Approach for User Behaviour Classification and Prediction*, *Journal of Cloud Computing: Advances, Systems and Applications*, (2019) 8:17, pp. <https://doi.org/10.1186/s13677-019-0144-9>, Springer, SCI Indexed.
14. Munir Ahmad, Umar Farooq, Atta-Ur-Rahman, Abdulrahman Alqatari, Sujata Dash & Ashish Kr. Luhach (2019) *Investigating TYPE constraint for frequent pattern mining*, *Journal of Discrete Mathematical Sciences and Cryptography*, 22:4, 605-626, Taylor-Francis, DOI:10.1080/09720529.2019.1637158, 2169-0065, ESCI & Scopus indexed, IF-0.77
15. Sujata Dash, Ajith Abraham, Ashish Kr Luhach, Jolanta Mizera-Pietraszko and Joel JPC Rodrigues, *Hybrid chaotic firefly decision-making model for Parkinson's disease diagnosis*, *International Journal of Distributed Sensor Networks*, 2019, Vol. 15(12), SCI, Scopus indexed, IF-1.787, ISSN- 15501329, <https://doi.org/10.1177/155014771989521>
16. S. Dash, S. Biswas, D. Banerjee & A. Rahman, "Edge and Fog Computing in Healthcare – A Review," *Scalable Computing: Practice and Experience*, Volume 20, Number 2, pp.

- 191–205. <http://www.scpe.org>, DOI 10.12694/scpe.v20i2.1504, ISSN:1895-1767, 2019. Scopus and SCI indexed. I.F-0.466
17. S. Dash, R. Thulasiram & P.Thulasiram, A Modified Firefly based Meta-Search Algorithm for feature selection: A Predictive Model for Medical Data, International Journal of Swarm Intelligence, IJSIR: Volume 10, Issue 2, Article 2, 2019, IGI Global, USA. Web of Science, and Scopus indexed. ISSN: 1947-9263, 10.4018/IJSIR.2019040101
18. S. Biswas, S. Dash, A Hybrid Bootstrapping Approach for developing Odiya Named Entity Corpora from Wikipedia, International Journal of Engineering & Technology, 7 (4.38) (2018) 11-16, ISSN 2227-524X, <http://dx.doi.org/10.14419/ijet.v7i4.38.24311>
19. B. Sahu, S. Dash, S. N. Mohanty, S. K. Rout, Ensemble Comparative Study for Diagnosis of Breast Cancer Datasets, International Journal of Engineering & Technology, 7 (4.15) (2018) 281-285
20. M. Panda, S. Dash, A Framework for Testing Object Oriented Programs Using Hybrid Nature Inspired Algorithms, A. K. Luhach et al. (Eds.): ICAICR 2018, CCIS 955, pp. 1–9, 2019. Springer Nature, Singapore, [https://doi.org/10.1007/978-981-13-3140-4\\_](https://doi.org/10.1007/978-981-13-3140-4_)
21. Biswas S., Dash S., Acharya S. (2019) Firefly Algorithm Based Multilingual Named Entity Recognition for Indian Languages. In: Luhach A., Singh D., Hsiung PA., Hawari K., Lingras P., Singh P. (eds) Advanced Informatics for Computing Research. ICAICR 2018. Communications in Computer and Information Science, vol 955, pp 540-552. Springer, Singapore
22. Azam M., Atta-ur-Rahman, Sultan K., Dash S., Khan S.N., Khan M.A.A. (2019) Automated Test Case Generation and Prioritization Using GA and FRBS. In: Luhach A., Singh D., Hsiung PA., Hawari K., Lingras P., Singh P. (eds), Communications in Computer and Information Science, vol 955, pp.571-584. Springer, Singapore
23. Atta-ur-Rahman, Sujata Dash, Mahi Kamaleldin, Areej Abed, Atheer Alshaikhussain, Heba Motawei, Nadeen Al. Amoudi, Wejdan Abahussain, A Comprehensive study of mobile computing in Telemedicine, A. K. Luhach et. al. (Eds): ICAICR 2018, CCIS 956, pp. 413-425, 2019. Springer, Singapore
24. Atta-ur-Rehman, Sujata Dash, Kiran Sultan, Muhammad Aftab Khan, Management of Resource Usage in Mobile Cloud Computing, International Journal of Pure and Applied Mathematics, Volume 119 No. 16, 2018, 255-261, ISSN: 1314-3395 (on-line version) 2018. Scopus Indexed. IF: 0.139

25. Atta-Ur-Rehman & S. Dash, Data Mining for Student's Trends Analysis using Apriori Algorithm, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol. 10, number 18, pp 107-115, 2017, ISSN: 0974 – 5572 IF: 0.104
26. Atta-Ur-Rehman & S. Dash, Big Data Analysis for Teachers Recommendation using Data Mining Techniques, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol 10, number 18, pp. 95-105, 2017, ISSN: 0974 – 5572.
27. M. Panda & S. Dash, Automatic Test suite Generation for Object Oriented programs using Metaheuristic Cuckoo search Algorithm, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol. 10, number 18, pp: 71-79, 2017. ISSN: 0974 – 5572.
28. C. Mohapatra, S. Dash, A. Mishra & U. Majhi, Performance Evaluation through the use of different Kernel functions in SVM for the identification of native Indian Languages, International Journal of Control Theory, and Applications (IJCTA), International Science Press, vol. 10, number. 18, pp. 63-69, 2017. ISSN: 0974 – 5572.
29. S. Biswas & S. Dash, Hybrid Multilingual Named Entity Recognition for Indian Languages, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol. 10, number. 18, pp. 57-62, 2017. ISSN: 0974 – 5572.
30. R. N. Behera, P. Baral, S. Saha & S. Dash, Emotion based Classification of Human voice using an Optimized Machine Learning Approach, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol. 10, number. 18, pp. 51-55, 2017. ISSN: 0974 – 5572.
31. R. N. Behera, P.L. Saha, A. Chakroborty & S. Dash, Hybrid Movie Recommendation System based on PSO based clustering, International Journal of Control Theory and Applications (IJCTA), International Science Press, vol. 10, number. 18, pp. 41-49, 2017. ISSN: 0974 – 5572. Scopus indexed
32. Manan Roy, Rabi Narayan Behera and Sujata Dash. Ensemble based Hybrid Machine Learning Approach for Sentiment Classification- A Review. *International Journal of Computer Applications* 146(6):31-36, July 2016.
33. B.N. Patra & Sujata Dash, A FRGSNN Hybrid Feature Selection Combining FRGS filter and GSNN wrapper (2016), International Journal of Latest Trends in Engineering and Technology, vol.7, Issue 2, pp. 8-15, July 2016. ISSN: 2278-621X, DOI: <http://dx.doi.org/10.21172/1.72.502>. IF: 4.490

34. M. Hanmandlu, Dilip Choudhury, Sujata Dash "Detection of Fabric Defects using Fuzzy Decision Trees" International Journal of Signal and Imaging Systems Engineering (IJSISE), Inderscience, vol. 9, No. 3, pp. 184-198, 2016, ISSN prints: 1748-0698. Refereed, Impact Factor- 0.07, ESCI, Scopus indexed
35. Chandrakant Mohapatra, Sujata Dash & Umakanta Majhi, A comprehensive review of the speech dependent features and classification models used in Identification of Languages (2016), International Journal of Computer application (IJCA), vol. 147, Issue No. 5, pp: 1-4, August 2016. ISSN: 0975-8887. DOI: 10.5120/ijca2016911052.
36. S. Dash, B.N. Patra, Genetic diagnosis of cancer by evolutionary fuzzy-based neural network ensemble, International Journal of Knowledge Discovery in Bioinformatics, IGI Global, Now International Journal of Applied Research in Bioinformatics (IJARB), pp.1-20, vol.6, 2016, ISSN: 1947-9115; e-ISSN: 1947-9123; Peer-reviewed, ACM digital library, IET-Inspecc is a hosted database in WEB of SCIENCE, Impact Factor:0.26
37. M. Panda, P.P. Sarangi, S. Dash, Automatic test data generation using metaheuristic cuckoo search algorithm (2015), International Journal of Knowledge Discovery in Bioinformatics (IJKDB), IGI-Global (Now) International Journal of Applied Research in Bioinformatics (IJARB), Vol. 5, Issue 2, article 2, 2015, ISSN: 1947-9115; e-ISSN: 1947-9123; Peer-reviewed, ACM digital library, IET-Inspecc is a hosted database in WEB of SCIENCE, Impact Factor:0.26.
38. R. N. Behera, S. Dash, A particle swarm optimization based hybrid recommendation system (2016), International Journal of Knowledge Discovery in Bioinformatics (IJKDB), IGI-Global, (Now) International Journal of Applied Research in Bioinformatics (IJARB), Vol. 6, Issue 2, 2016, ISSN: 1947-9115; e-ISSN: 1947-9123; Peer-reviewed, ACM digital library, IET-Inspecc is a hosted database in WEB of SCIENCE, Impact Factor:0.26.
39. Sujata Dash and Rabi Behera, "Sampling based Hybrid Algorithms for Imbalanced Data Classification", International Journal of Hybrid-Intelligent-Systems, 13 (2016) 77–86. DOI: 10.3233/HIS-160226. IOS Press. Scopus indexed. Referred journal. IF- 1.27, ISSN 1448-5869
40. Sitanath Biswas, Sweta Acharya and Sujata Dash, Automatic Text Summarization for Oriya Language, International Journal of Computer Applications 132(1):19-26, December 2015. Published by Foundation of Computer Science (FCS), NY, USA, ISSN 0975 – 8887. IF-0.715, Peer-reviewed

41. S. Dash, B. N. Patra, "Correlations Based Rough Set Method for Diagnosis and Drug Design Using Microarray Dataset", International Journal of Computing Algorithm (IJCOA), volume: 04, Special Issue: March 2015 Pages: 1147 – 1152 ISSN: 2278-2397.IF-0.309, Peer-reviewed.
42. S. Sen, S. Dash, "Empirical Evaluation of Classifiers' Performance Using Data Mining Algorithm", International Journal of Computer Trends and Technology (IJCTT), vol. 21, Number 3, 2015.IF – 1.517, non-referred, ISSN: 2231 – 2803, peer-reviewed.
43. Sen, Sanjay Kumar; Pani, Subhendu Kumar; Ojha, Ananta Charan; Dash, Sujata, "Meta-Learning in Data Classification: An Analysis", IUP Journal of Computer Sciences. Jan2015, Vol. 9 Issue 1, pp.14-24, ISSN: 0973-9904, refereed.
44. Sanjay Kumar Sen, Subhendu Kumar Pani, Ananta Charan Ojha and Sujata Dash, "MADAM: A Distributed Data Mining System Architecture Using Meta-Learning", published in The IUP Journal of Information Technology, Vol. 10 Issue 4, p7-18, Dec 2014, ISSN: 0973-2896, refereed
45. Sanjay Sen, Sujata Dash, "Application of Meta Learning Algorithms for the Prediction of Diabetes Disease", International Journal of Advance Research in Computer Science and Management Studies, volume 2, Issue 12, pp.394-401, 2014, ISSN: 2321-7782, indexed-Index Copernicus, refereed, Scientific Indexing Services, Thomson Reuters, Index Copernicus
46. Anil Kumar Mishra, Tarini Charan Panda, Sujata Dash, "Modeling and Simulation concept for evaluating the Performance of Computers in a Network under Cyber Attack", International Journal of Scientific & Engineering Research, Volume 6, Issue 1, pp.420-423, ISSN 2229-5518, January-2015, UGC Approved, EBSCO, Thomson Reuters, Index Copernicus, Impact Factor: 4.4
47. S. Dash, "Hill-climber Based Fuzzy-Rough Feature Extraction with an Application to Cancer Classification", Journal of Network and Innovative Computing, ISSN 2160-2174 Volume 2 (2014) pp. 178-186, peer-reviewed.
48. M. Hanmandlu, Dilip Choudhury, Sujata Dash, "Detection of defects in fabrics using toposy fractal dimension features", Signal image and Video Processing (SIViP), Vol. 8, Issue 2, February 2014, DOI 10.1007/s11760-013-0604-5, IF-1.894, ISSN:1863-1703, Refereed. Pp. 1521-1530, SCIE indexing.
49. Subrat P. Pattanaik, Sujata Dash, "E-Learning 3.0: Agent Supervised Collaborative Learning in Web 3.0", International Journal of Computer Science and Technology



- (IJCST), vol. 5, Issue SPL 2, Jan to March 2014, ISSN: 0976-8491, IF-0.478, Peer-reviewed, Google Scholar, Index Copernicus
50. Sanjay Kumar Sen, Sujata Dash, "Meta Learning Algorithm for Credit Card Fraud Detection", International Journal of Engineering Research and Development e-ISSN: 2278-067X, p-ISSN: 2278-800X, www.ijerd.com Volume 6, Issue 6 (March 2013), PP. 16-20, Peer-reviewed, IF- 1.458.
51. Sujata Dash, B. N. Patra, "Redundant Gene Selection based on Genetic and Quick-Reduct Algorithms", IJMIA: International Journal on Data Mining and Intelligent Information Technology Application, Vol. 3, No. 2, pp. 1 ~ 9, ISSN: 2234-3660, 2013, IF-3.89, Refereed.
52. B. N. Patra, Sujata Dash, B. K. Tripathy," Neural Techniques for Improving the Classification Accuracy of Microarray Data Set using Rough Set Feature selection Method", IJCTT: International Journal of Computer Trends and Technology, ISSN: 2231 – 2803, vol.4, issue3, 2013, IF-2.75, pp-424-429, UGC Approved, Thomson Reuter, Cross Ref
53. Sujata Dash, Bichitrananda Patra, B.K. Tripathy, "Study of Classification Accuracy of Microarray Data for Cancer Classification using Multivariate and Hybrid Feature Selection Method", IOSR Journal of Engineering, ISSN:2250-3021 Volume 2, Issue 8, (August 2012), pp 112-119. ([www.iosrjen.org](http://www.iosrjen.org)), refereed, IF-1.645. ISSN: 2278-8719, UGC, Index Copernicus, Cross Ref
54. Sujata Dash, Bichitrananda Patra, B.K. Tripathy "A Hybrid Data Mining Technique for Improving the Classification Accuracy of Microarray Data Set", Published Online in IJ. Information Engineering and Electronic Business, (IJIEEB), 2012,2,43-50, April 2012 in MECS(<http://www.mecspress.org/>) DOI:10.5815/ijieeb.2012.02.07, ISSN: 2074-9031 (Online) DOI: 10.5815, IF-0.12, refereed journal.
55. Subrat P Pattanayak, Sujata Dash, Sanjay Sen, "Optimized Multi Agent Coordination using Evolutionary Algorithm: Special Impact in Online Education", International Journal of Computer Science and Network (IJCSN), Volume 1, Issue 4, August 2012, ISSN 2277-5420, IF- 0.274, Springer Mendley. Peer-reviewed. Pp. 128-135
56. Sanjay Ku. Sen, Sujata Dash, Subrat P. Pattnaik, "Agent Based Meta Learning in Distributed Data Mining System", Published in International Journal of Engineering Research and Applications (IJERA), ISSN: 2248-9622(Online), vol 2, Issue 3,May-Jun 2012, pp. 342-348, IF- 1.69, Peer-reviewed.

57. B. N. Patra, Sujata Dash, "Reliability Analysis of Classification of Gene Expression Data using Efficient Gene Selection Techniques", published in International Journal of Computer Science Engineering and Technology (IJCSET), December 2011, vol. 1, Issue 11, 696-701, ISSN:2231-0711, Peer-reviewed.
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59. Subrat P. Pattanaik, Sujata Dash, Sanjay Sen, "Optimization of Multi-Agent Task Allocation using Backtracking Algorithm: A Heuristic Approach " is published by the International Journal Advances In Computational Sciences And Technology (ACST), Volume 3, Number 4, pp.483-492, ISSN:0974-4738, 2010, IF – 0.86, Peer-reviewed.
60. B. N. Patra, S. P. Singh, Sujata Dash "A different technique for gene selection and classification of gene expression data", published in Journal of Computer and Information Technology, Vol. 2, No.1, 15-24,2011, ISSN: 0975-9646, IF – 2.93, refereed.
61. Subrat P. Pattanayak, Sujata Dash "Coordination of Multi-Agents: An Advanced AI Technique", Int'l journal HIT Transaction on ECCN, ISSN: 0973-6875, Vol. 2, No. 5, pp259-265, Jan-March 2007, refereed. journal.
62. Subrat P. Pattanayak, Sujata Dash, "Efficient distributed data mining using intelligent agents", International Journal of Computer Science and Applications (IJCSA), Vol 1, Jan-Feb, ISSN: 0974-0767, 2008, IF – 0.3208.
63. M. Hanmandlu, Sujata Dash, D. K. Choudhury, "Fabric image defect detection by using GLCM and ROSETTA", International Journal Science and Applications, (IJCSA), vol 2, No. 1, pp47-50, ISSN: 0974-1003 (Print), April/May 2009.
64. D.K. Choudhury, M. Hanmandlu, Sujata Dash, "Fabric Image Defect Detection using MDC, ROSETTA and HPEF", International Journal HIT Transaction on ECCN, ISSN: 0973-6875, Vol. 3, No:9, pp-20-23, April/May 2010, refereed journal.
65. Sujata Dash, T. C. Panda, "Second-order fluid flow analysis between two infinite parallel plates", Modelling, Measurement and control, B, AMSE press Vol. 59, No.3, 1995, pp 27-47, ISSN: 1259-5969, refereed. Journal.
66. T. C. Panda, R. C. Das and Sujata Dash, "Flow of second -order fluid in a double array of vertices and behind a two-dimensional grid", Modelling, measurement and control, B, AMSE PRESS, Vol. 59, No.3, 1995, pp15-26, ISSN: 1259-5969, refereed. Journal.

67. S. Dash, T. C. Panda, "Heat transfer in a second-order fluid flow between two parallel plates", Teorijska Primenjena Mehanika, 21, pp. 43-52, 1995 UDK533, ISSN No: 1450-5584, refereed.

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### **Patents Published:**

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1. A Collaborative Unmanned Aerial Vehicle (Uav) System, Application no. 201931031317, Publication no. 37/2019, Indian Patent
  2. Artificial Intelligence based system and method to diagnose Parkinson's disease, Application no. 201941024901, and filing date 23-06-2019, Indian Patent
  3. Method for detection and restoration of the crack digital images, Application no. 201921025348, Indian Patent
  4. IoT Based Integrated Device and System for Health Analysis, Application no. 201931039857, Publication no. 45/2019, Indian Patent
  5. A Novel Selection Algorithm Based on Similarity Theory, Application no. 201941037560, Publication no. 41/2019, Indian Patent
  6. System And Method for Automatically Detecting Plagiarism, Application no. 201931034352, Publication no. 37/2019, Indian Patent
  7. A hybrid Odiya system for search engines, Application no.201931052949, Publication Date: 03-01-2020, Indian Patent
  8. A device for easing the anxiety of a user, Application no. 202031002202, Publication Date:07-02-2020, Indian Patent
  9. Blockchain-based system and method for providing a platform for managing blood banks, Application No. 202031009562, Publication Date:05/03/2020, Indian Patent
  10. Automatic Contactless Health parameters measurement and monitoring apparatus, Application No. 2021107455, Publication date:22.10.2021, Australian Patent
  11. Copyright on Odia Unicode Dataset
  12. Copyright on the code developed for the Odia Plagiarism detection tool
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## International / National Conferences:

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1. B. Sahu, Sujata Dash, Hybrid Multifilter Ensemble-Based Feature Selection Model from Microarray Cancer Datasets Using GWO with Deep Learning, IEEE 2023 3<sup>rd</sup> International Conference for Intelligent Technologies, Karnataka, India. (accepted)
2. B. Sahu, Sujata Dash, Feature Selection with Novel Mutual Information and Binary Grey Wolf Waterfall Model, IEEE APSIT 2023, India. (accepted)
3. Chandrasekhar Sahu, Sujata Dash, Prediction of heart disease using heterogeneous ensemble techniques, International Conference on Biotechnology and Bioinformatics: Perspectives and Challenges-2022.
4. S. Giri, Sujata Dash, Decision-making system in health care applying Long-Short-Term Memory (LSTM) and Convolutional Neural Network (CNN) model & using data balancing technique, International Conference on Biotechnology and Bioinformatics: Perspectives and Challenges-2022.
5. K. Rupabanta Singh, Sujata Dash, Detection of Arrhythmia from ECG Signal using Bat Algorithm based Deep Neural Network, International Conference on Biotechnology and Bioinformatics: Perspectives and Challenges-2022.
6. R. Singh, S. Dash, A-ur-Rahman, Detection of Arrhythmia from ECG signal using Bat Algorithm based Deep Neural Network, ICACIE-2022, 23-24 Dec 2022, LNNS series of Springer, 2022. SCI/Scopus/DBLP indexed.
7. S. Giri, S. Dash, T. Sahoo, An Intelligent Diabetes Prediction System Augmenting Feature Selection and Balancing Techniques, ICACIE-2022, 23-24 Dec 2022, LNNS series of Springer, 2022. SCI/Scopus/DBLP indexed.
8. B. Sahu, S. Dash, Hybrid binary Grey Wolf with Jaya Optimizer for biomarker selection from cancer dataset, IEEE Conference, 2022
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10. Madhumita Panda & Sujata Dash, An Enhanced JAYA Algorithm based Test Suite Generation for Object Oriented Programming: A Model Based Testing Approach", 5th International Conference on Advanced Informatics for Computing Research, ICAICR-2021, Springer Conference, 18-19<sup>th</sup> December 2021, CCIS series (Communications in Computer and Information Science), ISSN Number-1865-0929, Gurugram, Haryana,

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53. Sujata Dash, B. N. Patra, A book chapter on “Feature Selection Algorithms for Classification and Clustering”, "Global Trends in Intelligent Computing Research and development", A Volume in the advances in computational intelligence and robotics book series, published by IGI Global, pp: 111-130, Dec.,2013, ISSN: 2327-0411;EISSN: 2327-042X, Scopus indexed.
54. Sujata Dash, “A Method for Feature Reduction in Gene Expression-Based Disease Classification”, Proceedings of PIMR SIXTH INTERNATIONAL CONFERENCE and a BOOK chapter on “Business Innovations and Entrepreneurship: Transforming world Economy”, from February 11-12, 2012.
55. Subrat P. Pattanayak, Sujata Dash, “Data mining techniques in marketing applications”, Edited Book: Globalization, Opportunities and Challenges, Wisdom Publication, pp:162-175, New-Delhi, India, Book Chapter, 2007-08. ISBN: 81-89547-39-9.
56. S. Dash, “A Review of Proactive and Reactive Routing Algorithms for Mobile Ad hoc Network” Fifth PIMR International Conference, Indore, India. On “Value Creation for Competitive Differentiation: Emerging Business Models in the Global Economy”, January 30-31, 2011. (Book Chapter), ISBN: 978-81-7446-928-1.

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## **Subjects Handled**

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- ✚ Design of Algorithm and Analysis
  - ✚ Principle of Programming languages.
  - ✚ Theory of Finite Automata.
  - ✚ Systems programming.
  - ✚ Computational Intelligence- Machine Learning, Supervised and unsupervised machine Learning, Artificial Intelligence
  - ✚ Pattern Recognition
  - ✚ Bioinformatics
  - ✚ Data Science
  - ✚ Data Mining and data warehousing
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## Projects Applied

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1. Non-invasive screening of oral potentially malignant disorders based on advanced deep learning method, Submitted to ICMR in 2023, Delhi, India.
2. Multimodal data-driven model for tagging oral cancer, submitted to DST-SERB in 2023, Delhi, India.
3. Project: Development of Predication, Monitoring and Recovery Strategies for Natural Disasters Using Distributed and Nature-Inspired Learning Techniques- Applied to BRICS, 2019.
4. Project: Plagiarism Detection tool for Indian Language documents. Applied under Consortium Mode to MEITY funding agency, Govt. of India in collaboration with Punjabi University, Jalandhar.
5. Project: Pre-proposal on Establishment of Bioinformatics and Computational Biology Centre Submitted to Department of Biotechnology, Ministry of Science and Technology, Government of India

### ✚ **Project Completed**

**Plagiarism Detection Software for Odia Document using Fuzzy Neural Network funded by Department of Science & Technology, Odisha, India, 2019, completed in December 2022.**

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## **Awards and Recognition**

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- ✚ Editorial Board Member of Journal of Information Analysis, March, 2023
- ✚ Awarded with Global Distinguished Award 2023 by IEEE, IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies, 11-12<sup>th</sup> March 2023, The Maldives National University, Male City, Maldives.
- ✚ Outstanding Scientist Award, In the International Research Awards on Science, Technology and Management, held on 14 & 15 May 2022, Chennai, India, Organized by VDGGOOD Professional Association.
- ✚ Awarded with 'Best Researcher Award' by International Research Awards on Science, Health and Engineering, SHEN 2021 Awards

- ✚ Delivered a Keynote address on “Shaping the future with information technology” in a national Webinar held on 24<sup>th</sup> July 2021 at Dreams School of Professional Studies, Cuttack, India.
- ✚ Awarded with UGC Travel grant 2018 to attend HIS 2018 at Portugal.
- ✚ Delivered a keynote speech on “A Genesis of Meta-heuristic Algorithms and Applications”, International Conference on Computational Intelligence and Data Analytics ICCIDA-2018, organised by the Department of Computer Science & Engineering, Gandhi Institute for Technology (GIFT), Bhubaneswar, India on 26th-27th October 2018.
- ✚ Delivered a speech as Guest Speaker on “Online Courses to Augment Pedagogy”, for AICTE-ISTE Sponsored one-week Induction/Refresher Program on “Pedagogical Techniques in Technical Education” from 16th to 21st July, 2018 at Indus College of Engineering, Bhubaneswar.
- ✚ Awarded with International Scientist Awards on Engineering, Science and Medicine, 15 & 16 Feb-2020, Chennai, India.
- ✚ Awarded with IARDO Award for Excellence – 2018, on the occasion of International Award Conference on Multidisciplinary Research and Latest Innovation, “International Association of Research and Developed Organization in association with Gurukul Institute of Engineering & Technology, Kota, on 28<sup>th</sup> of October 2018.
- ✚ Conducted a Special Session on Special Session on Soft Computing: Swarm and Evolutionary Computations and Applications at 2<sup>nd</sup> International Conference on Advanced Informatics for Computing Research-2018 held in Shimla during July 14-15, 2018.
- ✚ Awarded with “Adarsh Vidhya Saraswati Rastriya Puraskar” by Glacier Journal Research Foundation, Global Management Council, Gujarat, on 2<sup>nd</sup> April 2018.
- ✚ Awarded with Best Session Chair in SCESM-2017, 27-28 January, Belagavi, Karnataka, India.
- ✚ Awarded with Titular Fellowship-2016 from the Association of Commonwealth Universities, which is tenable at Manitoba University, Canada (March 2017- Aug 2017).
- ✚ IGI Global Special Issue Guest Editor of International Journal of Knowledge Discovery in Bioinformatics (IJKDB), Special Issue on Biologically Inspired Meta-Heuristic Computing Models and Optimization Techniques, 2016.
- ✚ Conducted a Special Session on Computational Swarm Intelligence in the 5th International Conference on Frontiers in Intelligent Computing: Theory and Applications (FICTA-2016) held in Bhubaneswar in the temple city of Odisha (India) during September 16-17, 2016.
- ✚ Awarded with Travel Grant to attend International Conference abroad from the Department of Science and Technology, India, sanction order no. SR/ITS/1724/2012-2013 dated 19-11-2012
- ✚ Awarded with Travel Grant to attend International Conference in South Africa from CICS, Chennai, India, sanction order no: DO\Lr.\TF-IV\2015-16.
- ✚ Reviewer of IEEE Access and IEEE Man, Machine & Cybernetics Journal.
- ✚ Reviewer of the “Journal of Computing and Information Technology”, published by University Computing Centre, Zagreb, Croatia.
- ✚ Technical Editor of the International Journal of Computer Science and Applications.
- ✚ Reviewer of Journal of soft computing, ICT Academy of Tamil Nadu, [www.ictactjournals.in](http://www.ictactjournals.in).
- ✚ Reviewer of Elsevier, Inder Science, Springer.
- ✚ Reviewer and Organizing member of International Conference InSITE organized by Informing Science Institute (ISI).

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## **Professional Membership**

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- ✚ IEEE membership (Regd. No: 92954178)
- ✚ Member of IEEE Systems, Man and Cybernetics
- ✚ Member of Bioinfo Publication- Membership Id: 576E8B84C8
- ✚ Member of CSI.
- ✚ Life Member of the Indian Meteorological Society.
- ✚ Life member of OITS, Bhubaneswar, India.
- ✚ Senior Member of Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEEES), Hong Kong.
- ✚ Life member of Odisha Mathematical Society, Odisha, India.

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## **Country Visited**

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- ✚ United States of America: Invited to present paper and Chairing Technical sessions of BIOCOMP2012 in Las Vegas.
- ✚ South Korea: Invited for paper presentation and Chairing Technical Sessions of ICCIT 2012, at Seoul.
- ✚ Tunisia: Invited for paper presentation and Chairing Technical Sessions of HIS 2013 at Tunis.
- ✚ Kuwait: Invited for paper presentation and Chairing Technical Sessions of HIS 2014 at Gulf University of Science and Technology, Kuwait.
- ✚ South Africa: Invited for paper presentation and chairing Technical Session of NaBIC 2015 at Pietermaritzburg, South Africa.
- ✚ Canada: As a visiting Professor at University of Manitoba, Canada, 2017.
- ✚ Portugal: Invited for paper presentation and Chairing Technical Sessions of HIS 2018 at Portugal.
- ✚ Maldives, Male: Received Global Distinguished Award from IEEE

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## **Participation in National / International Seminars & Workshops**

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- ✚ Delivered a lecture on “Overview of Machine Learning Algorithms: Decision Trees and Random Forest” in a One Week Online Faculty Development Program (FDP) sponsored by COMPUTER SCIENCE AND ENGINEERING, AICTE Training and Learning (ATAL) Academy Program on Data Sciences from 15-19 Feb, IAE, Hyderabad, 2021.
- ✚ Delivered a Keynote address on “Shaping the future with information technology” in a national Webinar held on 24<sup>th</sup> July 2021 at Dreams School of Professional Studies, Cuttack, India
- ✚ Dr Sujata Dash, Associate Professor of North Orissa University, Baripada, Odisha, contributed as Resource Person in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Application of IOT in Agriculture" from 06/07/2021 to 10/07/2021 at Gandhi Institute for Technology (GIFT) Bhubaneswar

- ✚ Delivered a Keynote lecture on “Genesis of Nature-Inspired Metaheuristic Algorithms and its Applications” at the International Conference on Computational Intelligence and Data Analytics ICCIDA-2018 on October 26<sup>th</sup>, 2018; the conference is organised by the Department of Computer Science & Engineering, Gandhi Institute for Technology, (GIFT) Bhubaneswar
- ✚ Attended a National level Workshop on Recent Developments in Translational Medicine, TEQIP-III, Sponsored One week faculty development programme conducted by the Department of Biotechnology, Delhi Technological University, Delhi, from 12<sup>th</sup> March to 16<sup>th</sup> March 2018.
- ✚ Delivered a Guest lecture on “Unsupervised Learning- A Text Document Clustering”, DST sponsored national conference on data analytics, machine learning and security in the Department of Computer Science and Information Technology, Guru Ghasidas University, A Central University, Bilaspur, 15<sup>th</sup>-16<sup>th</sup> February 2018.
- ✚ Organized a special session on “Nature-Inspired Algorithms for Feature Selection and Function Approximation” at the 2nd International Conference on “Sustainable Computing Techniques in Engineering, Science and Management”, Belagavi, Karnataka, India on 27-28 January 2017.
- ✚ Attended a National level Hands-on Training Workshop on “Mixed Research Methods, Techniques and Data Analysis using ‘R’ – Qualitative and Quantitative Methods”, conducted by the Christ University at the Nodal Office, Vazhuthacaud, Thiruvananthapuram, India on September 19-25, 2016.
- ✚ Invited as a resource person to deliver a lecture on “Data Analysis using Machine Learning” for a Faculty Development Programme (TEQIP) on Data Analytics conducted by the Computer Science Department of College of Engineering and Technology, Bhubaneswar, Odisha, India on 2nd and 3rd August 2016.
- ✚ Invited as a resource person to deliver a lecture on “Advanced Data Models” for a DST, India-sponsored 10-Day Faculty Development Training Programme on Big Data Analytics conducted by the Department of Information Technology, Institute of Engineering & Management, Calcutta on 18th May 2016 - 1st June 2016.
- ✚ Delivered a Plenary Talk on “Nature Inspired Metaheuristic Algorithms” at a national conference on “Recent Trends in Mathematics and Information Technology” on 18th December 2015, organised by the Department of Mathematics and Computer Science, U.N. College, Nalagaja, Mayurbhanj, Odisha, India.
- ✚ Participated and presented a paper at an International Conference on Advances in Nature and Biologically Inspired Computing (NaBIC 2015) in Pietermaritzburg, South Africa, December 01-03, 2015.
- ✚ Participated and presented a paper at an International Conference on Computing and Intelligence Systems (ICCIS 2015) in D. G. Vaishnav College, Chennai, Tamilnadu, India, March 19-21, 2015.
- ✚ Participated, Chaired and presented a paper at an International Conference On Computational Intelligence in Data Mining (ICCIDM) in Veer Surendra Sai University of Technology, Burla, India, December 20-21, 2014.
- ✚ Participated and presented a paper at the 14th International Conference on Hybrid Intelligent Systems (HIS 2014) at Gulf University for Science and Technology, Kuwait, December 14-16, 2014.
- ✚ Attended a National Workshop on “Big Data Analysis, NWBDA 2014” from 24<sup>th</sup> – 30<sup>th</sup> November 2014, Organized by the Computer Science Department of KIIT University, Bhubaneswar, Odisha, India.

- ✚ Attended a National Workshop on “Computational Intelligence” from 24th June to 28th June 2014, Organized by the Computer Science Department of KIIT University, Bhubaneswar, Odisha, India.
- ✚ Participated and presented a paper at an International Conference HIS 2013 in Tunisia from 4th to 6th December 2013.
- ✚ Attended a short-term course on “Computational Biology, Bioinformatics & Their Application to Healthcare” from 28th October to 1st November 2013, Organized by the Computer Science Department of IIT, Kharagpur, India.
- ✚ Attended a 5 Days Hands-on Workshop on Molecular Biotechnology and Bioinformatics held from 3rd June 2013 to 7th June 2013 at the International Centre for Stem Cells, Cancer and Biotechnology (ICSCCB), Pune, India.
- ✚ Attended “Train the Trainer” Workshop on “BIG DATA – an Industry Perspective”, conducted by Infosys Limited, Bhubaneswar, from 18th to 20th July 2013, India.
- ✚ Attended a short-term “Data Mining and Image Analysis for Medical Informatics” course from 8th April to 12th April 2013, Organized by the Computer Science Department of IIT Kharagpur, India.
- ✚ Participated and presented a paper in an International Conference ICCIT2012 at Seoul, Republic of Korea, from 3rd December to 5th December 2012.
- ✚ Attended and presented a paper at an International Conference BIOCOMP’12 at Las Vegas, USA, from 16th July to 19th July 2012, funded by the Department of Science and Technology, Govt of India.
- ✚ Participated in Mission 10X Workshop conducted at C.V.Raman College of Engineering at Bhubaneswar, India from 29th March to 2nd April 2010.
- ✚ Participated in a “High Impact Teaching Skills” workshop attested by Dale Carnegie & Associates, Inc. Trainer and Wipro on 29th & 30th of March 2010 at OEC, Bhubaneswar, Odisha, India.
- ✚ Participated in a Short-Term In-House Training Programme on “Exposure to MATLAB” organised by NITTTR, Kolkata, India from 16.03.2009 to 20.03.2009.
- ✚ Participated and presented a paper at an International Conference on Advances in Computing by ACM, Chikili, Buldana, India from Feb 21-22, 2008.
- ✚ Participated in a two days National Workshop on “Use & Deployment of Web & Video Courses for Enriching Engineering Education” under the National Programme on Technology Enhanced Learning, a joint venture of IIT Kharagpur, Kanpur and Guwahati and was held on 20th and 21st May, 2007 at the Centre for Educational Technology, IIT Guwahati, India.
- ✚ Workshop on APPLIED STATISTICAL METHODS: A SOFTWARE ORIENTED APPROACH from 1st to 6th November 1999 at ISI, Hyderabad; India.

## **Collaborated Project work with the Department of Computer Science, University of Manitoba:**

### **Project Title:** Map-Reduce-based Meta-Heuristic Algorithms in Big-Data Analytics

This research analyses microarray cancer datasets to identify a subset of molecular biomarkers to obtain high classification accuracy. The dimension of the input data is much larger than the number of samples. The subset of biomarkers provides information about tumour diagnosis, prognosis of disease-specific outcomes and prediction of therapeutic responses. The feature selection process can be regarded as a combinatorial search problem. Thus, an optimization technique can handle this problem efficiently. A meta-heuristic-based hybrid predictive model is proposed to handle the statistical and computational

challenges inherent to this high-dimensional low sample-size data. This approach aims to find an optimum balance between the precision of the biomarker discovery and the computation cost. The model combines a filter ranking method with a wrapper technique by taking advantage of both the filter method's efficiency and the wrapper method's high accuracy. The hybrid method applies a filter to remove irrelevant features. It uses the ranking coefficients to reinforce the search efficiency of the metaheuristic algorithm, which is wrapped in the wrapper method. It reduces feature redundancy. The noise present in the dataset downgrades the selection process, which warrants developing a pre-processing framework as a part of the biomarker prediction model. The capability and performance of the predictive model will be evaluated on four highly skewed datasets, followed by a validation of the biomarkers using Gene Ontology (GO) datasets.

## **Personal Profile**

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## **Names and Addresses of Four Referees**

### *1. Prof. Ajith Abraham*

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### *4. Dr. Muhammad Atta-ur-Rahman*

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