



## Prof. Bijan Bihari Misra

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**Designation** : Professor

**Department** : Department of Computer Science and Engineering  
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### RESEARCH INTERESTS

- ✓ Data Mining
- ✓ Machine Learning
- ✓ Computational Intelligence
- ✓ Evolutionary Computing
- ✓ Swarm Intelligence

### Academic Qualifications

Ph. D. (Engineering), Biju Patnaik University of Technology, Rourkela

M. Tech. (Computer Science), Utkal University, Bhubaneswar

## PUBLICATIONS

### JOURNALS

1. B. B. Misra, S. Dehuri, "Functional Link Artificial Neural Network for Classification Task in Data Mining," J. Computer Sci., 3 (12): 948-955, 2007.
2. B. B. Misra, S. Dehuri, G. Panda, P.K. Dash, "Fuzzy Swarm Net (FSN) for Classification in Data Mining," the CSI Journal on Computer Science and Engineering, Vol. 5, No. 2&4(b), pp. 1-8, 2007.
3. B. B. Misra, S. Dehuri, "A Novel Stranger Sociometry Particle Swarm Optimization (S2PSO)", the Icfai Journal of Computer Science, vol. 1, No. 1, pp17-23, July, 2007.
4. B. B. Misra, S. Dehuri, G. Panda, P.K. Dash, "A Reduced Comprehensible Polynomial Neural Network for classification in Data Mining," Pattern Recognition Letters, Volume 29, Issue 12, 1, pp 1705-1712, September 2008.
5. S. C. Satapathy, J. V. R. Murty, P. Reddy, B. B. Misra, P. K.Dash, G. Panda, "Particle Swarm Optimized Multiple Regression Linear Model for Data Classification" Applied Soft Computing, Volume 9, Issue 2, March 2009, Pages 470-476.
6. S. Mishra, B. B. Misra, "Diagnosis of Breast Cancer with Linear Polynomial Swarm," International Journal of Advanced Computing (IJAC) vol. 2, issue 1, pp. 32- 39, Jan 2010.

7. S. C. Rai, B. B. Misra, A. K. Nayak, R. Mall, and S. K. Pradhan, "A Multi-Objective QoS Optimization with Fuzzy based parameter setting for real time multicasting," *International Journal of Communications, Network and System Sciences*, vol. 3, pp. 530-539, June 2010.
8. B. B. Misra, S. Dehuri, A. Ghosh, and S.-B. Cho, "A Condensed Polynomial Neural Network for Classification Using Swarm Intelligence," *Applied Soft Computing Journal*, Elsevier Science, vol. 11, issue 3, April 2011, pp. 3106-3113.
9. B. K. Nayak, S. C. Rai, and B. B. Misra, "A High Connectivity Routing for Diminishing Cluster Size in Wireless Sensor Network," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 1-7.
10. D. Pradhan, and B. B. Misra, "Mining Coherent Patterns from Heterogeneous Microarray Data," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 48-54.
11. R. K. Swain, N. K. Kamila, and B. B. Misra, "Visualization of Human Foreseeability: An analytical study," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 19-26.
12. S. C. Nayak, H. S. Behera, and B. B. Misra, "Stock Index Prediction with Neuro-Genetic Hybrid Techniques," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 27-34.
13. S. K. Jena, and B. B. Misra, "Impact of Data Distribution and Training Size on Classifier Design: A case study," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 89-95.
14. S. Das, and B. B. Misra, "Analysis of Approximation Capability of FLANN with different functional expansions: Stock Index Prediction a Case Study," *Special issue of International Journal of Computer Science and Informatics (IJCSI)*, ISSN: 2231-5292, vol. 2, issue 3, March 2012, pp. 60-66.
15. S. C. Nayak, B. B. Misra and H. S. Behera, "Impact of Data Normalization on Stock Index Forecasting," *International Journal of Computer Information Systems and Industrial Management Applications (IJCISIM)*, ISSN- 2150-7988, Vol. 6 (2014) pp. 257 – 269.
16. S. C. Nayak, B. B. Misra, H. S. Behera, "A Neuro-Fuzzy Hybrid Network for Stock Future Index Forecasting," *International Journal of Computer Science And Technology (IJCST)*, ISSN : 2229-4333, Vol. 5, Issue Spl - 2, Jan - March 2014.
17. S. S. Rout, B. B. Misra and S. Samanta, "Load Allocation in Academic Environment: A Multi Objective PSO Approach, *GSTF International Journal on Computing (JoC)*, Springer, DOI 10.7603/s40601-013-0036-7, Vol.3, No.4, April 2014.
18. Rasmita Dash, Bijan Bihari Misra, "Analysis Two Stage Feature Selection for Classification of Microarray Databases," *European Journal of Academic Essays*, ISSN: 2183-1904, Special Issue (1): pp. 18-26, 2014
19. Lokanath Satapathy, Bijan B. Misra, Bhabendra N. Biswal, "SFLANN for Classification of Life Science Databases," *European Journal of Academic Essays*, ISSN: 2183-1904, Special Issue (1): pp. 9-17, 2014
20. Sushri Samita Rout, Bijan Bihari Misra, Sasmita Samanta, "Hybrid Research: A methodological paradigm for interdisciplinary research," *European Journal of Academic Essays*, ISSN: 2183-1904, Special Issue (1): pp. 5-8, 2014
21. S. C. Nayak, B. B. Misra, H. S. Behera, "Soft and Evolutionary computing Techniques for stock Market Forecasting: A Survey," *European Journal of Academic Essays*, ISSN: 2183-1904, Special Issue (1), 2014.
22. S. C. Nayak, B. B. Misra, H. S. Behera, "Artificial Chemical Reaction Optimization of Neural Networks for Efficient Prediction of Stock Market Indices," *Ain Shams Engineering Journal*, 2015.

23. S. C., Nayak, B. B., Misra, and H. S., Behera, 'An adaptive second order neural network with genetic algorithm based training (ASONN-GA) to forecast the closing prices of the stock market, *Int. Journal of Applied Metaheuristic Computing*, IGI Global, vol. 7, Article 3, 2015.
24. S. C., Nayak, B. B., Misra, and H. S., Behera, 'Fluctuation prediction of stock market index by adaptive evolutionary higher order neural networks', *Int. Journal of Swarm Intelligence*, Inderscience, Vol.2, Issue 2-4, pp. 229-253, 2016.
25. S. C. Nayak, B. B. Misra, and H. S. Behera, (2016), 'Efficient forecasting of financial time series data with virtual adaptive neuro-fuzzy inference system', *Int.J. of Bussiness Forecasting and Marketing Intelligence*, Inderscience, Vol.2, Issue 4, 2016.
26. Dash, R., Misra, B.B, Dehuri, S., Cho, S.B., "Efficient Microarray Data Classification with Three-Stage Dimensionality Reduction", *Advances in Intelligent Systems and Computing*", 308(1), pp. 805-812, 2015, ISSN-1615-3871, SJR-0.15, Springer Verlag
27. Dash, R., Misra, B.B, "Reduction combination determination for efficient microarray data classification with three stage dimensionality reduction approach", *Smart Innovation, Systems and Technologies*, 32, pp. 695-703, 2015, ISSN: 2190-3018, SJR-0.15, Springer Verlag
28. Jena, M., Dash, R., Misra, B. B. , "Biological data analysis using hybrid functional link artificial neural network ", *Source of the Document Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 947, pp. 88-97, 2015, ISSN: 0302-9743, SJR-0.339, Springer Verlag
29. Dash, R., Misra, B.B, "Gene Selection and Classification of Microarray data: A Pareto DE Approach", *Intelligent Decision Technologies*, IOS Press, vol. 11. Issue 1, pp. 93-107, 17 April 2017.
30. R. Dash, B. B. Misra, "Pipelining the Ranking Techniques for Microarray Data Classification: A case study," *Applied Soft Computing*, Vol. 48, Nov 2016, pp.298-316. <https://doi.org/10.1016/j.asoc.2016.07.006>
31. S. C. Nayak, B. B. Misra, H. S. Behera, "Exploration and Incorporation of Virtual Data Position for Efficient Forecasting of Financial Time Series," *International Journal of Industrial and Systems Engineering*, Inderscience Publishers, vol. 26, No. 1, 2017, pp 42-62, DOI: 10.1504/IJISE.2017.10003891
32. S. S. Rout, B. B. Misra and S. Samanta, "Competency mapping with Sugeno fuzzy inference system for variable pay determination: A case study," *Ain Shams Engineering Journal*, 2017.
33. Nayak, S.C., Misra, B.B. & Behera, H.S., "Efficient financial time series prediction with evolutionary virtual data position exploration," *Neural Computing & Applications*, Springer (2017). doi:10.1007/s00521-017-3061-1
34. R. Dash, B. B. Misra, "Performance analysis of clustering techniques over microarray data: A case study," *Physica A (Elsevier)* 493 (2018) 162–176.
35. S. C. Nayak, B. B. Misra, & H. S. Behera, "ACFLN: Artificial Chemical Functional Link Network for Prediction of Stock Market Index," *Evolving Systems*, Springer, 2018.
36. R. Dash, B. B. Misra, "A multi-objective feature selection and classifier ensemble technique for microarray data analysis," *Int. J. Data Mining and Bioinformatics*, Vol. 20, No. 2, 2018, pp. 123-160.
37. S. C. Nayak, B. B. Misra, "Estimating Stock Closing Indices Using a GA-Weighted Condensed Polynomial Neural Network," *Financial Innovation*, Springer, Vol. 4, No. 21, pp. 1-22, 2018.
38. Sarat Chandra Nayak, Bijan Bihari Misra, "A chemical-reaction-optimization-based neuro-fuzzy hybrid network for stock closing price prediction", *Financial Innovation*, Springer, Vol. 5, No.1, Article No. 38, 2019 (DOI : 10.1186/s40854-019-0153-1)

39. Sarat Chandra Nayak, Bijan Bihari Misra, "Extreme learning with chemical reaction optimization for stock volatility prediction", Financial Innovation, Springer, Vol. 6, Article No. 16, 2020 (DOI: 10.1186/s40854-020-00177-2)
40. Chapala Maharana, Ch. Sanjeev Kumar Dash, Bijan Bihari Mishra, Satchidananda Dehuri, "Feature Selection for Classification Using Extreme Learning Machine", Journal of Emerging Technologies and Innovative Research (JETIR), Vol.7, No.6, pp.769-774, 2020 (DOI:10.6084/m9.figshare.JETIR2006103)
41. Debasmita Pradhan, Biswajit Sahoo, Bijan Bihari Misra, Sudarsan Padhy, "A multiclass SVM classifier with teaching learning based feature subset selection for enzyme subclass classification", Applied Soft Computing, Elsevier, Vol. 96, 2020 (DOI: 10.1016/j.asoc.2020.106664)

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2. B.B.Misra, S. C. Satapathy, S. Dehuri, P. K. Dash, "A Fast and Efficient Genetic Algorithm for Data Clustering" in International Conference on Systemic, Cybernetics and Informatics, 4th-8th Jan, 2006, Hyderabad.
3. B.B.Misra, S. C. Satapathy, B. Biswal, P. K. Dash, G. Panda, "Pattern Classification using Polynomial Neural Network" IEEE International Conferences on Cybernetics & Intelligent Systems (CIS) and Robotics, Automation & Mechatronics (RAM) (CIS-RAM 2006), 7 - 9 June 2006 in Bangkok, Thailand.
4. B. B. Misra, S. C. Satapathy, N. Hanoon, P.K.Dash, G.Panda, "Particle Swarm Optimized Polynomials for Data Classification", IEEE International Conference on Intelligent Systems Design and Applications (ISDA'06) 16-19 Oct 2006 in Jinan, China.
5. S. C. Satapathy, B.B.Misra, S. Dehuri, P. K. Dash, "Swarm Intelligent Multiple Regression Pattern classifier" in International Conference on Systemic, Cybernetics and Informatics, 3th-7th Jan, 2007, Hyderabad.
6. B. B. Misra, P. K. Dash, G.Panda, "Pattern Classification using Local Linear Wavelet Neural Network," IEEE International Conference on Information and Communication Technology (ICICT 2007) 7-9 March 2007, Dhaka, Bangladesh.
7. S. C. Satapathy, V. Katari, R. Parinmi, S. Malireddi, V. N. K. Srujan, B. B. Misra, J. V. R. Murty, " A new approach of integrating PSO & improved GA for Clustering with parallel and transitional technique," 3rd International Conference on Natural Computation (ICNC'07), 24-27, Aug-07, Haikou, China.
8. B. B. Misra, B. N. Biswal, G. Panda, P. K. Dash, "Simplified Polynomial Neural Network for Classification Task in Data Mining," IEEE Congress on Evolutionary Computation September 25-28, 2007, Singapore.
9. B. B. Misra, S. Dehuri, P. K. Dash, and G. Panda, "Reduced Polynomial Neural Swarm Net for Classification Task in Data Mining," IEEE World Congress on Computational Intelligence, June 1-6, 2008, Hongkong.
10. B. B. Misra, S. Dehuri, and S.-B. Cho, "Genetic Feature Selection for Optimal Functional Link Artificial neural Network in Classification", 9th International Conference on Intelligent Data Engineering and Automated Learning, Nov 2-5, 2008, Korea, C. Fyfe et al. (Eds.): IDEAL 2008, Lecture Notes in Computer Science ( LNCS) 5326, pp. 156-163, © Springer-Verlag Berlin Heidelberg 2008.
11. B. B. Misra, P. K. Dash, G. Panda, "Polynomial Neural Fuzzy Swarm Net for Pattern Classification," 17th International Conference on Computing (CIC 2008) 3-5 Dec 2008 Mexico.

12. S. Mishra, B. B. Misra, "Linear Polynomial Swarms for Aid to the Physicians Efforts in Proper Diagnosis of Breast Cancer" International Conference on Advanced Computing Technologies (ICACT 2008), Dec 26-27, 2008, Hyderabad, India.
13. B. B. Misra, S. Dehuri, and S.-B. Cho, "A Notable Swarm Approach to Evolve Neural Network for Classification in Data Mining", ICONIP 2008, New Zealand.
14. S. Mishra, B. B. Misra, "Diagnosis of Breast Cancer with Linear Polynomial Swarms," Second International Conference on Data Management (ICDM2009), 10-11, Feb, 2009, N. Delhi, India.
15. B. B. Misra, P. K. Dash, G. Panda, "Optimal Polynomial Fuzzy Swarm Net for Handling Data Classification Problems," IEEE International Advance Computing Conference (IACC'09) on March 6-7, 2009, Patiala, India.
16. S. C. Rai, B. B. Mishra, A. K. Nayak, R. Mall, and S. Pradhan, "A Multi-Objective Pareto-Optimal Genetic Algorithm for QoS Multicasting," IEEE International Advance Computing Conference (IACC'09) on March 6-7, 2009, Patiala, India.
17. A. K. Nayak, S. C. Rai, B.K. Satapathy, V. Krishna Kumari, and B. B. Misra, "Estimation of physical properties of Calcined-Alumina using Swarm Evolved Neural Net," IEEE International Symposium on Biologically Inspired Computing And Applications (BICA-2009) Bhubaneswar, India Dec. 21-22, 2009.
18. A. K. Nayak, B. B. Misra, and S. C. Rai, "Energy Efficient Adaptive Sensing Range for Sensor Network," IEEE International Conference on Energy, Automation and Signal (ICEAS-2011), 28-30th Dec. 2011.
19. S. C. Nayak and B. B. Mishra, "A Neuro-Genetic Technique for Index Prediction," Internal Symposium on Computing Control & Applications (ISCCIA-2011) , Bhubaneswar College of Engineering, India, 23-25 Dec, 2011.
20. S. C. Nayak, B. B. Misra, and H. S. Behera, "Index Prediction with Neuro-Genetic Hybrid Network: A Comparative Analysis of Performance," International Conference on Computing, Communication and Applications (ICCCA – 2012), PSNA College of Engineering and Technology, Dindigul (near Madurai), Tamilnadu, India, 22 - 24 February, 2012.
21. B. K. Nayak, S. C. Rai, and B. B. Misra, "A High Connectivity Cluster Routing for Energy-Balanced Wireless Sensor Network," International Conference on Computing, Communication and Applications (ICCCA – 2012), PSNA College of Engineering and Technology, Dindigul (near Madurai), Tamilnadu, India, 22 - 24 February, 2012.
22. R. K. Swain, N. Kamila, and B. B. Misra, "Swarm Intelligence to Estimate Human Foreseeability," International Conference on Computing, Communication and Applications (ICCCA – 2012), PSNA College of Engineering and Technology, Dindigul (near Madurai), Tamilnadu, India, 22 - 24 February, 2012.
23. R. Dash, B. B. Misra, P. K. Dash, and G. Panda, "Greedy Polynomial Neural Network for Classification Task in Data Mining," Second IEEE World Congress on Information and Communication Technologies (WICT 2012), IIITM-Trivandrum, Kerala, India, October 30- November 02, 2012.
24. S. S. Rout, B. B. Misra, and S. Samanta, "Competency mapping in academic environment: A multi objective approach," Second IEEE World Congress on Information and Communication Technologies (WICT 2012), IIITM-Trivandrum, Kerala, India, October 30- November 02, 2012.
25. S. C. Nayak, B. B. Misra, and H. S. Behera, "Evaluation of Normalization Methods on Neuro-Genetic Models for Stock Index Forecasting," Second IEEE World Congress on Information and Communication Technologies (WICT 2012), IIITM-Trivandrum, Kerala, India, October 30- November 02, 2012.
26. R. K. Swain, N. Kamila, and B. B. Misra, "Recognition of the State of Mind using Hamming Swarm Net," Second IEEE World Congress on Information and Communication Technologies (WICT 2012), IIITM-Trivandrum, Kerala, India, October 30- November 02, 2012.
27. B. B. Misra, A. K. Nayak, and S. C. Rai, "Achieving Energy Efficiency by Self-adjusting Sensing Range and Positioning in Wireless Sensor Networks," Second

- IEEE World Congress on Information and Communication Technologies (WICT 2012), IITM-Trivandrum, Kerala, India, October 30- November 02, 2012.
28. S. C. Nayak, B. B. Misra and H. S. Behera, "Hybridizing Chemical Reaction Optimization with Artificial Neural network for Stock Future Index Forecasting," International Conference on Emerging Trends and Applications in Computer Science (ICETACS-2013), Shillong, Meghalaya, 13-14 Sept. 2013.
  29. S. C. Nayak , B. B. Misra & H. S. Behera, "An evolutionary neural network model for financial time series forecasting", AICTE sponsored national conference on soft computing: A panorama of possibilities, 1-2 June 2013, NIIS, Bhubaneswar.
  30. R. Dash, B. B. Misra, S. Dehuri, and S.-b. Cho, "Efficient Microarray Data Classification with Three Stage Dimensionality Reduction," International Conference on Intelligent Computing, Communication & Devices (ICCD-2014), 18th and 19th April 2014, ITER, Bhubaneswar, 2014.
  31. S. C. Nayak , B. B. Misra & H. S. Behera, "Cooperative optimization for efficient financial time series forecasting," 8th. International conference on computing for sustainable development, INDIACom-2014, IEEE, doi: 10.1109/IndiaCom.2014.6828114.
  32. S. C. Nayak, B. B. Misra, and H. S. Behera, "Comparison of Performance of Different Functions in Functional Link Artificial Neural Network: A Case Study on Stock Index Forecasting," International Conference on Computational Intelligence in Data Mining, ICCIDM 2014, VSSUT, Burla, India, 20-21, Dec, 2014, L.C. Jain et al. (eds.), Computational Intelligence in Data Mining – Vol. 2, Smart Innovation, Systems and Technologies 32, pp. , © Springer India 2015.
  33. S. C. Nayak, B. B. Misra, and H. S. Behera, "A Pi-Sigma Higher Order Neural Network for Stock Index Forecasting," International Conference on Computational Intelligence in Data Mining, ICCIDM 2014, VSSUT, Burla, India, 20-21, Dec, 2014, L.C. Jain et al. (eds.), Computational Intelligence in Data Mining – Vol. 2, Smart Innovation, Systems and Technologies 32, pp. 311-319, © Springer India 2015.
  34. Rasmita Dash, and B. B. Misra, "Reduction Combination Determination for Efficient Microarray Data Classification with Three Stage Dimensionality Reduction Approach," International Conference on Computational Intelligence in Data Mining, ICCIDM 2014, VSSUT, Burla, India, 20-21, Dec, 2014, L.C. Jain et al. (eds.), Computational Intelligence in Data Mining – Vol. 2, Smart Innovation, Systems and Technologies 32, pp. 695-703, © Springer India 2015.
  35. Manaswini Jena, Rashmita Dash, and Bijan Bihari Misra, "Biological Data Analysis Using Hybrid Functional Link Artificial Neural Network," Swarm, Evolutionary, and Memetic Computing, Springer International Publishing Switzerland 2015, B.K. Panigrahi et al. (Eds.): SEMCCO 2014, LNCS 8947, pp. 1–10, 2015. DOI: 10.1007/978-3-319-20294-5\_8.
  36. K. Abhishek, B. B. Misra," Hybrid Genetic Algorithm and time delay neural network model for Forecasting Traffic flow," IEEE International Conference on Engineering and Technology (ICETECH), 17-18 March 2016.
  37. Sarat Chandra Nayak, Ch. Sanjeev Kumar Dash, Bijan Bihari Mishra, Satchidananda Dehuri, "Multi-verse optimization of multilayer perceptrons (MV-MLPs) for efficient modeling and forecasting of crude oil prices data", International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making (BITMDM-2019), Springer, pp. 46-54, 2020

## BOOKS

1. S. Dehuri, M. R. Patra, B. B. Misra, and A. K. Jagadev (Eds.), Intelligent Techniques in Recommendation Systems: Contextual Advancements and New Methods, DOI: 10.4018/978-1-4666-2542-6, ISBN13: 9781466625426, ISBN10: 1466625422, EISBN13: 9781466625433, IGI Global Snippet, 2012.

2. B. B. Misra, S. Dehuri, B. K. Panigrahi, A. K. Nayak, B. S. P. Misra, and H. Das (Eds.), *Computational Intelligence in Sensor Networks*, Springer, 2018.

### MONOGRAPHS

1. B. B. Misra, P. K. Dash, G. Panda, *Neuro-Swarm Techniques for Classifier Design: Concepts, Models, Methods and Algorithms*, Lambert Academic Publishing, Germany, ISBN: 978-3-659-11439-7 (2012).

### BOOK CHAPTERS

1. B. B. Misra, P. K. Dash, and G. Panda, "Optimized polynomial fuzzy swarm net for classification," in S. Dehuri, and S. B. Cho (eds), *Knowledge Mining Using Intelligent Agents*, Vol. 6, *Advances in Computer Science and Engineering: Texts*, pp. 259-295, Imperial College Press, 2010.
2. B. B. Misra, P. K. Dash, and G. Panda, "Evolution of neural network and polynomial network," in S. Dehuri, and S. B. Cho (eds), *Knowledge Mining Using Intelligent Agents*, Vol. 6, *Advances in Computer Science and Engineering: Texts*, pp. 61-98, Imperial College Press, 2010.
3. B. B. Misra, P. K. Dash, and G. Panda, "Efficient Classifier Design with hybrid Polynomial Neural Network" in S. Dehuri, et al. (eds), *Integration of Swarm Intelligence and Artificial Neural Network*, series in *Machine Perception and Artificial Intelligence*, vol-78, pp. 179-212, World Scientific, 2011.
4. S. C. Nayak, B. B. Misra & H. S. Behera, "Adaptive Hybrid Higher Order Neural Networks for Prediction of Stock Market Behaviour", in Ming Zhang (eds), *Applied Artificial Higher Order Neural Networks for Control and Recognition*, Ch. 7, IGI Global, 2016, pp. 174-191.
5. S. C. Nayak, B. B. Misra & H. S. Behera, "Improving Performance of Higher Order Neural Network using Artificial Chemical Reaction Optimization: A Case Study on Stock Market Forecasting", in Ming Zhang (eds), *Applied Artificial Higher Order Neural Networks for Control and Recognition*, Ch.11, IGI Global, 2016, pp 253-280.
6. S. C. Nayak, B. B. Misra & H. S. Behera, "On Developing and Performance Evaluation of Adaptive Second Order Neural Network With GA-Based Training (ASONN-GA) for Financial Time Series Prediction," in Nilanjan Dey (eds), *Advancements in Applied Metaheuristic Computing*, ch 10, IGI Global, 2018, pp. 231-263.
7. S. C. Nayak, B. B. Misra & H. S. Behera, "Escalation of Prediction Accuracy With Virtual Data: A Case Study on Financial Time Series," Sujata, Dash, B. K. Tripathy, and Atta ur Rahman, eds, *Handbook of Research on Modeling, Analysis, and Application of Nature Inspired Metaheuristic Algorithms*, ch.22, IGI Global, 2018, pp. 433 – 460.
8. Rout, Sushri Samita, and Bijan Bihari Misra. "Competency Mapping in Academic Environment: A Swarm Intelligence Approach." Sujata, Dash, B. K. Tripathy, and Atta ur Rahman, eds, *Handbook of Research on Modeling, Analysis, and Application of Nature-Inspired Metaheuristic Algorithms*, IGI Global, 2018, pp. 244-263.
9. S. C. Nayak, S. Das, & B. B. Misra, "Development and Performance Analysis of Fireworks Algorithm-Trained Artificial Neural Network (FWANN): A Case Study on Financial Time Series Forecasting," Ying Tan, eds, *Handbook of Research on Fireworks Algorithms and Swarm Intelligence*, IGI Global, 2020, pp. 176-194.

## THESIS SUPERVISION

### Ph.D.

1. Mrs. Rashmita Dash, "Designing Efficient Models using Computational Intelligence for Microarray Data Analysis," SoA University, Bhubaneswar, 2017.
2. Dr. Sarat Chandra Nayak, Regd. No. 11060026, "Financial Time Series Forecasting using Soft Computing Techniques," continuing at Veer Surendra Sai University of Technology (VSSUT), Burla, 2016.
3. Dr. Sushri Samita Rout, "Computational Intelligence for Mapping Academic Competency in Technical Institutes," Co-supervisor: Sasmita Samanta, KIIT University, Bhubaneswar, 2015.

### M. TECH.

1. Kumar Abhishek, "Intelligent Data Analysis of Transportation Usage Data," Silicon Institute of Technology, Biju Patnaik University of Technology, Rourkela, Orissa, India, 2014-2016.
2. Saroj Kanta Jena, "Credit Analysis using Data Mining Techniques," Silicon Institute of Technology, Biju Patnaik University of Technology, Rourkela, Orissa, India, 2010-2012.
3. Sarat Chandra Nayak, "Index Prediction Using Multilayer perceptron-Genetic Aglorithm Hybrid Approach," School of Mathematics, Statistics and Computer Science, Utkal University, 2009-2011.
4. Suvendu Kumar Mohapatra, "A Neural Network Model for Weather Forecasting using Particle Swarm Optimization Technique," IIIT, Bhubaneswar, 2008-10.
5. Seshadri Baral, "Yield Prediction Using Artificial Neural Networks," IIIT, Bhubaneswar, 2008-10.
6. Diptiprava Das, "Data Clustering Using Modified Fuzzy PSO," College of Engineering Technology, Bhubaneswar, BPUT, 2008-10.
7. Mohapatra Girashree Sahu, "Fuzzy Rule Mining for Pattern Classification," College of Engineering Bhubaneswar, 2007-09.
8. Jayashree Dev, "Data Classification using Neuro-genetic Approach," College of Engineering Bhubaneswar, 2007-09.
9. Sovan Kumar Pattnaik, "Designing a optimization technique on Data classification using Neuro-PSO Approach," College of Engineering Bhubaneswar, BPUT, 2007-09.
10. Somya Sahoo, "Clustering Using Particle Swarm Optimization," College of Engineering Bhubaneswar, BPUT, 2007-09.

## TALKS

1. Talk on "Pattern Classification with Hybrid Polynomial Neural Swarm" on 27.10. 2006, in the National Seminar on "Recent Advances in Computing and Applications" at ABIT, Cuttack.
2. Talk on "Implementation of Soft Computing/Optimization Techniques," on 18th Jan 2009, in the National Seminar-cum-Workshop on "Advances in Computational and Optimization Techniques and Its Applications," (ACOTA-09) 16th to 18th Jan 09, organized by C. V. Raman College of Engineering, Bhubaneswar.
3. Talk on "Multi Objective Optimization with Genetic Algorithm," on 9th July 2011 in the workshop on Numerical Optimization & its Engineering Applications, 7<sup>th</sup> to 10<sup>th</sup> July 2011, organized by silicon Institute of Technology, Bhubaneswar.



4. Resource person for topic "Application of Fuzzy Logic to Classification Rule Mining" in the Faculty Development Program (FDP) on "Fundamentals of Fuzzy Logic and its Applications" organized by the Silicon Institute of Technology, Bhubaneswar, and Orissa Information Technology Society (OITS), dt. 22<sup>nd</sup> Aug 2012.
5. Talk dt.23.08.2014 on "Polynomial Neural Network Algorithm Design, Complexity Analysis and Suggestions for Improvement," in the National Seminar of Recent Trends in Analysis of Algorithms and Complexity Theory, ABIT, Cuttack, 22-23 August 2014.
6. Talk dt.23.01.2016 on "Machine Learning in Big Data," in the National Seminar of Recent Trends in Big Data Storage and Cloud Computing, Current State and Future Opportunities (NSRTBDSC-2016), Gandhi Institute for Education and Technology, Bhubaneswar, 22-23 January 2016.
7. Talk dt. 12.03.2016 on "Artificial Chemical Reaction Optimization: Overview and applications" at the National Seminar on "Bio-Inspired Computing and Applications," The Department of Information and Communication Technology, Fakir Mohan University, Balasore.
8. Resource Person for one week National Workshop on Machine Learning for Big Data Analysis (MLBDA-2016) from 6<sup>th</sup>-11<sup>th</sup> May 2016 at Bhubaneswar, organized by Silicon Institute of Technology, Bhubaneswar.
9. Resource Person on 17.02.2017 for the National Workshop on Data Analytics from 17<sup>th</sup>-18<sup>th</sup> Feb 2017 at Dhenkanal, organized by Synergy Institute of Technology, Dhenkanal.
10. Resource Person and Expert for Workshop on Matlab and Applications, 25<sup>th</sup> - 30<sup>th</sup> March 2017, College of Basic Science and Humanities, OUAT, Bhubaneswar.
11. Resource Person on 8<sup>th</sup> Dec 2017 for Faculty Development Program on Machine Learning 4-9<sup>th</sup> December, 2017, C. V. Raman College of Engineering, Bhubaneswar.
12. Resource Person for National Workshop on "Data Analytics Using R" (DAUR 2018), 6<sup>th</sup> -12<sup>th</sup> July 2018, Silicon Institute of Technology, Bhubaneswar.

#### **SESSIONS CHAIRED**

1. The Evolutionary Data Mining session of IEEE Congress on Evolutionary Computation, at Singapore, September 25-28, 2007.
2. Conference and Student Convention of the Computer Society of India, Eastern Regional on "Cloud Computing, Facilitating Collaboration Transformation & Growth" 05-07 March, 2012, at C. V. Raman college of Engineering Bhubaneswar.
3. The Nature Inspired Optimization session of 2<sup>nd</sup> IEEE World Congress on Information and Communication Technologies (WICT2012), Oct 30-Nov 02, 2012, Indian Institute of Information Technology and Management-Kerala (IIITM-K)
4. The Innovation in Computing & Simulation session of 2<sup>nd</sup> International Conference on Computational Intelligence in Data Mining (ICCIDM-2015), 5<sup>th</sup>-6<sup>th</sup> Dec 2015, Hotel Suryansh Bhubaneswar.
5. The 5<sup>th</sup> session of the 14<sup>th</sup> International Conference on Information Technology (ICIT-2015), 21<sup>st</sup> -23<sup>rd</sup> Dec 2015, Xavier Institute of Management, Xavier University, Bhubaneswar.
6. Data Science, Session1 of the 16<sup>th</sup> International Conference on Information Technology (ICIT-2017), 21<sup>st</sup> -23<sup>rd</sup> Dec 2017, Silicon Institute of Technology, Bhubaneswar.