

Dr. Bijaya Ketan Panigrahi

Associate Professor

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Areas of Interest

Power system planning, Power system protection, Evolutionary computing, Soft computing, Forecasting.

Specialization:

Power system planning, operation and control Machine intelligence and AI application in power engineering Forecasting in energy sectors

Sectors Interested to Offer Service:

Educational / Academic institutions, Industry (PSUs), R&D Organizations, Government (including funding agencies)

Major Professional Contributions:

1. Development of advanced signal processing and Artificial intelligence tools for power quality assessment
2. Development of hybrid signal processing and AI tools for condition monitoring of induction motors
3. Development of hybrid evolutionary algorithms for the planning and operation of power system
4. Power system protection, adaptive protection and wide area protection
5. Smart grid protection
5. Forecasting in energy sector.

Professional Experience:

- Research Associate (Oct 1990 - June 1992)
- Lecturer (June 1992 - June 1998)

- Senior Lecturer (June 1998 - March 2005)
- Assistant Professor (March 2005 - Dec 2010)
- Associate Professor (Dec 2010).

Education

B.Sc (Engg) – 1990

ME (Power system) – 1995

Ph D (2004)

Awards and Major Professional Recognitions

1. Young Scientist Award for the Year 2004 in Engineering and Technology, given by Orissa Bigyan Academy, Department of Science & Technology, Govt. of Orissa

2. Gold Medal and 1st Prize for the Paper "Security Trend Analysis Using Expert System", by Orissa Engineering Congress in its 38th Annual Session held on 6th Feb. 1993 at Bhubaneswar

3. Institution of Engineers (India) Institution Award for the Technical paper " Detection and Classification of Power Quality Disturbances Using Phase Corrected Wavelet Transform and Artificial Neural Network" in 46th Annual Technical Session held on 20th Feb 2005 at Bhubaneswar

4. The Institution of Engineers (India) institution gold medal for presenting a paper titled "A hybrid approach for Short Term Electric Load Forecasting" on 52th Annual Technical Session held on 27th February 2011 at Bhubaneswar, India.

5. IETE-J C Bose Memorial Award 2013 for the best engineering oriented paper published in IETE JR_307_11, Jul-Aug 2012 , titled "A Modified PNN based algorithm for detecting turn faults in Induction Machines".

Publications:

1. Debanjan Konar, Siddhartha Bhattacharyya, Bijaya Ketan Panigrahi, Kazumi Nakamatsu: A quantum bi-directional self-organizing neural network (QBDSOINN) architecture for binary object extraction from a noisy perspective. Appl. Soft Comput. 46: 731-752 (2016)

2. Piyush Swami, Tapan Kumar Gandhi, Bijaya K. Panigrahi, Manjari Tripathi, Sneha Anand: A novel robust diagnostic model to detect seizures in electroencephalography. Expert Syst. Appl. 56: 116-130 (2016)

3. Aashish Mathur, Manav R. Bhatnagar, Bijaya K. Panigrahi: On the Performance of a PLC System Assuming Differential Binary Phase Shift Keying. IEEE Communications Letters 20(4): 668-671 (2016)

4. Pradip K. Das, Himansu Sekhar Behera, Swagatam Das, Hrudaya K. Tripathy, Bijaya K. Panigrahi, S. K. Pradhan: A hybrid improved PSO-DV algorithm for multi-robot path planning in a clutter environment. *Neurocomputing* 207: 735-753 (2016)
5. Jeevan Medikonda, Madasu Hanmandlu, Bijaya K. Panigrahi: Information set based gait authentication system. *Neurocomputing* 207: 1-14 (2016)
6. Deep Kiran, Bijaya K. Panigrahi, Swagatam Das, Nitesh Kumar: Linkage based deferred acceptance optimization. *Inf. Sci.* 349-350: 65-76 (2016)
7. Nitin Anand Shrivastava, Bijaya Ketan Panigrahi, Meng-Hiot Lim: Electricity price classification using extreme learning machines. *Neural Computing and Applications* 27(1): 9-18 (2016)
8. Pradipta K. Dash, Himansu Sekhar Behera, Bijaya K. Panigrahi: A hybridization of an improved particle swarm optimization and gravitational search algorithm for multi-robot path planning. *Swarm and Evolutionary Computation* 28: 14-28 (2016)
9. Avinash Sharma, Akshay Sharma, Bijaya K. Panigrahi, Deep Kiran, Rajesh Kumar: Ageist Spider Monkey Optimization algorithm. *Swarm and Evolutionary Computation* 28: 58-77 (2016)
10. Geeta Pathak, Bhim Singh, Bijaya Ketan Panigrahi: Control of Wind-Diesel Microgrid Using Affine Projection-Like Algorithm. *IEEE Trans. Industrial Informatics* 12(2): 524-531 (2016)
11. Debanjan Konar, Udit Kr. Chakraborty, Siddhartha Bhattacharyya, Tapan Kumar Gandhi, Bijaya Ketan Panigrahi: A quantum parallel bi-directional self-organizing neural network (QPBDSONN) architecture for extraction of pure color objects from noisy background. *ICACCI 2016*: 1912-1918
12. Saurav Gupta, Nitin Anand Shrivastava, Abbas Khosravi, Bijaya Ketan Panigrahi: Wind ramp event prediction with parallelized gradient boosted regression trees. *IJCNN 2016*: 5296-5301
13. Bijaya Ketan Panigrahi, Ponnuthurai Nagarathnam Suganthan, Swagatam Das, Suresh Chandra Satapathy: *Swarm, Evolutionary, and Memetic Computing - 6th International Conference, SEMCCO 2015, Hyderabad, India, December 18-19, 2015, Revised Selected Papers. Lecture Notes in Computer Science 9873, Springer 2016, ISBN 978-3-319-48958-2*
14. Prakash K. Ray, Bijaya K. Panigrahi, Pravat K. Rout, Asit Mohanty, Harishchandra Dubey:

Detection of Faults in Power System Using Wavelet Transform and Independent Component Analysis. CoRR abs/1609.08650 (2016)

15. Saurav Gupta, Nitin Anand Shrivastava, Abbas Khosravi, Bijaya Ketan Panigrahi: Wind ramp event prediction with parallelized Gradient Boosted Regression Trees. CoRR abs/1610.05009 (2016)

16. Prakash K. Ray, Bijaya K. Panigrahi, Pravat K. Rout, Asit Mohanty, Harishchandra Dubey: Fault Detection in IEEE 14-Bus Power System with DG Penetration Using Wavelet Transform. CoRR abs/1610.09345 (2016)

17. Prakash K. Ray, Bijaya K. Panigrahi, Pravat K. Rout, Asit Mohanty, Harishchandra Dubey: Fault Detection in IEEE 14-Bus Power System with DG Penetration Using Wavelet Transform. CoRR abs/1610.09345 (2016)

18. Hari Mohan Dubey, Manjaree Pandit, Bijaya Ketan Panigrahi: A Biologically Inspired Modified Flower Pollination Algorithm for Solving Economic Dispatch Problems in Modern Power Systems. Cognitive Computation 7(5): 594-608 (2015)

19. Aashish Mathur, Manav R. Bhatnagar, Bijaya K. Panigrahi: Performance Evaluation of PLC Under the Combined Effect of Background and Impulsive Noises. IEEE Communications Letters 19(7): 1117-1120 (2015)

20. S. Surender Reddy, Bijaya K. Panigrahi, Shantanab Debchoudhury, Rupam Kundu, Rohan Mukherjee: Short-term hydro-thermal scheduling using CMA-ES with directed target to best perturbation scheme. IJBIC 7(3): 195-208 (2015)

21. V. Ravikumar Pandi, Ankita Mohapatra, Bijaya K. Panigrahi, K. R. Krishnanand: A hybrid multi-objective improved bacteria foraging algorithm for economic load dispatch considering emission. IJCSE 11(2): 114-123 (2015)

22. Nitin Anand Shrivastava, Abbas Khosravi, Bijaya Ketan Panigrahi: Prediction Interval Estimation of Electricity Prices Using PSO-Tuned Support Vector Machines. IEEE Trans. Industrial Informatics 11(2): 322-331 (2015)

23. Debanjan Konar, Siddhartha Bhattacharyya, Nibaran Das, Bijaya Ketan Panigrahi: A Quantum Bi-Directional Self-Organizing Neural Network (QBDSOINN) for binary image denoising. ICACCI 2015: 1225-1230

24. Nitin Anand Shrivastava, Abbas Khosravi, Bijaya K. Panigrahi: Prediction interval estimation for wind farm power generation forecasts using support vector machines. *IJCNN* 2015: 1-7
25. Aashish Mathur, Manav R. Bhatnagar, Bijaya K. Panigrahi: Performance evaluation of PLC with log-normal channel gain over Nakagami-m additive background noise. *PIMRC* 2015: 824-829
26. Hari Mohan Dubey, Manjaree Pandit, Bijaya K. Panigrahi, Tushar Tyagi: Multi-objective Power Dispatch Using Stochastic Fractal Search Algorithm and TOPSIS. *SEMCCO* 2015: 154-166
27. Aashish Mathur, Manav R. Bhatnagar, Bijaya K. Panigrahi: Outage Probability Analysis of PLC with Channel Gain under Nakagami-m Additive Noise. *VTC Fall* 2015: 1-7
28. Bijaya Ketan Panigrahi, Ponnuthurai Nagarathnam Suganthan, Swagatam Das: Swarm, Evolutionary, and Memetic Computing - 5th International Conference, *SEMCCO* 2014, Bhubaneswar, India, December 18-20, 2014, Revised Selected Papers. *Lecture Notes in Computer Science* 8947, Springer 2015, ISBN 978-3-319-20293-8
29. Archana Sarangi, Shubhendu Kumar Sarangi, Sasmita Kumari Padhy, Siba Prasada Panigrahi, Bijaya Ketan Panigrahi: Swarm intelligence based techniques for digital filter design. *Appl. Soft Comput.* 25: 530-534 (2014)
30. Aashish Mathur, Manav R. Bhatnagar, Bijaya K. Panigrahi: PLC Performance Analysis Over Rayleigh Fading Channel Under Nakagami-m Additive Noise. *IEEE Communications Letters* 18(12): 2101-2104 (2014)
31. Bijaya K. Panigrahi, Manjaree Pandit, Hari Mohan Dubey, Ashish Agarwal, Wei-Chiang Hong: Invasive Weed Optimization for Combined Economic and Emission Dispatch Problems. *IJAEC* 5(1): 1-18 (2014)
32. Hari Mohan Dubey, Bijaya Ketan Panigrahi, Manjaree Pandit: Bio-inspired optimisation for economic load dispatch: a review. *IJBIC* 6(1): 7-21 (2014)
33. Ch. Sudheer, S. K. Sohani, Deepak Kumar, Anushree Malik, B. R. Chahar, A. K. Nema, Bijaya K. Panigrahi, R. C. Dhiman: A Support Vector Machine-Firefly Algorithm based forecasting model to determine malaria transmission. *Neurocomputing* 129: 279-288 (2014)

34. Ch. Suryanarayana, Ch. Sudheer, Vazeer Mahmood, Bijaya K. Panigrahi: An integrated wavelet-support vector machine for groundwater level prediction in Visakhapatnam, India. *Neurocomputing* 145: 324-335 (2014)
35. Manohar Singh, Bijaya K. Panigrahi, Abhijit R. Abhyankar, Swagatam Das: Optimal coordination of directional over-current relays using informative differential evolution algorithm. *J. Comput. Science* 5(2): 269-276 (2014)
36. Arkabandhu Chowdhury, Hamim Zafar, Bijaya K. Panigrahi, K. R. Krishnanand, Ankita Mohapatra, Zhihua Cui: Dynamic economic dispatch using Lbest-PSO with dynamically varying sub-swarms. *Memetic Computing* 6(2): 85-95 (2014)
37. Ch. Sudheer, R. Maheswaran, Bijaya K. Panigrahi, Shashi Mathur: A hybrid SVM-PSO model for forecasting monthly streamflow. *Neural Computing and Applications* 24(6): 1381-1389 (2014)
38. Swagatam Das, Subhodip Biswas, Bijaya K. Panigrahi, Souvik Kundu, Debabrota Basu: A Spatially Informative Optic Flow Model of Bee Colony With Saccadic Flight Strategy for Global Optimization. *IEEE Trans. Cybernetics* 44(10): 1884-1897 (2014)
39. Jeevanand Seshadrinath, Bhim Singh, Bijaya K. Panigrahi: Vibration Analysis Based Interturn Fault Diagnosis in Induction Machines. *IEEE Trans. Industrial Informatics* 10(1): 340-350 (2014)
40. Satrajit Mukherjee, Kunal Pal, Bodhisattwa Prasad Majumder, Chiranjib Saha, Bijaya K. Panigrahi, Sanjoy Das: Differential evolution based score level fusion for multi-modal biometric systems. *CIBIM 2014*: 38-44
41. Nitin Anand Shrivastava, Abbas Khosravi, Bijaya Ketan Panigrahi: Prediction interval estimation for electricity price and demand using support vector machines. *IJCNN 2014*: 3995-4002
42. Hari Mohan Dubey, Bijaya K. Panigrahi, Manjaree Pandit, Mugdha Udgir: Gbest Guided Gravitational Search Algorithm for Economic Load Dispatch. *SEMCCO 2014*: 706-720
43. Hari Mohan Dubey, Bijaya K. Panigrahi, Manjaree Pandit: Improved Flower Pollination Algorithm for Short Term Hydrothermal Scheduling. *SEMCCO 2014*: 721-737

44. Deep Kiran, Bijaya K. Panigrahi, Abhijit R. Abhyankar: Multi-objective Optimization of Economic-Emission Load Dispatch Using Cluster Based Differential Evolution. SEMCCO 2014: 809-820
45. M. R. Lohokare, Shyam S. Pattnaik, Bijaya K. Panigrahi, Sanjoy Das: Accelerated biogeography-based optimization with neighborhood search for optimization. Appl. Soft Comput. 13(5): 2318-2342 (2013)
46. Soumyadip Sengupta, Swagatam Das, Md. Nasir, Bijaya K. Panigrahi: Multi-objective node deployment in WSNs: In search of an optimal trade-off among coverage, lifetime, energy consumption, and connectivity. Eng. Appl. of AI 26(1): 405-416 (2013)
47. Deepak Kumar, Ch. Sudheer, Shashi Mathur, Bijaya K. Panigrahi: Hybrid algorithm performance with varying population size for multi-objective optimisation of in-situ bioremediation of groundwater. IJBIC 5(3): 164-174 (2013)
48. Manohar Singh, Bijaya Ketan Panigrahi, Abhijit R. Abhyankar: Optimal coordination of electro-mechanical-based overcurrent relays using artificial bee colony algorithm. IJBIC 5(5): 267-280 (2013)
49. Ch. Sudheer, Nitin Anand Shrivastava, Bijaya K. Panigrahi, Shashi Mathur: Streamflow forecasting by SVM with quantum behaved particle swarm optimization. Neurocomputing 101: 18-23 (2013)
50. Nitin Anand Shrivastava, Bijaya Ketan Panigrahi: Point and prediction interval estimation for electricity markets with machine learning techniques and wavelet transforms. Neurocomputing 118: 301-310 (2013)
51. Sanjay Agrawal, Rutuparna Panda, Sudipta Bhuyan, Bijaya K. Panigrahi: Tsallis entropy based optimal multilevel thresholding using cuckoo search algorithm. Swarm and Evolutionary Computation 11: 16-30 (2013)
52. Joymala Moirangthem, Bijaya Ketan Panigrahi, K. R. Krishnanand, Sanjib Kumar Panda: Robust Protective Relay Setting and Coordination Using Modified Differential Evolution Considering Different Network Topologies. SEMCCO (2) 2013: 107-118
53. Deep Kiran, Bijaya Ketan Panigrahi, Abhijit R. Abhyankar: Comparison between Differential Evolution Algorithm and Particle Swarm Optimization for Market Clearing with Voltage Dependent Load Models. SEMCCO (1) 2013: 209-221

54. Atul Dhingra, Amioy Kumar, Madasu Hanmandlu, Bijaya Ketan Panigrahi: Biometric Based Personal Authentication Using Eye Movement Tracking. SEMCCO (2) 2013: 248-256
55. Attia El-Fergany, Almoataz Y. Abdelaziz, Bijaya Ketan Panigrahi: Artificial Bee Colony-Based Approach for Optimal Capacitor Placement in Distribution Networks. SEMCCO (1) 2013: 424-435
56. Rohan Mukherjee, Rupam Kundu, Sanjoy Das, Bijaya Ketan Panigrahi, Swagatam Das: A Game Theoretic Approach for Reliable Power Supply in Islanded DG Grids. SEMCCO (2) 2013: 487-498
57. H. A. Abdelsalam, Almoataz Y. Abdelaziz, Reham A. Osama, Bijaya Ketan Panigrahi: Effect of Photovoltaic and Wind Power Variations in Distribution System Reconfiguration for Loss Reduction Using Ant Colony Algorithm. SEMCCO (1) 2013: 504-514
58. Swagatam Das, Preetam Dasgupta, Bijaya Ketan Panigrahi: Inter-species Cuckoo Search via Different Levy Flights. SEMCCO (1) 2013: 515-526
59. Hari Mohan Dubey, Manjaree Pandit, Bijaya Ketan Panigrahi, Mugdha Udgir: A Novel Swarm Intelligence Based Gravitational Search Algorithm for Combined Economic and Emission Dispatch Problems. SEMCCO (1) 2013: 568-579
60. Juan Luis Fernández Martínez, Ana Cernea, Esperanza García Gonzalo, Julian Velasco, Bijaya Ketan Panigrahi: Aligned PSO for Optimization of Image Processing Methods Applied to the Face Recognition Problem. SEMCCO (1) 2013: 642-651
61. K. R. Krishnanand, Syed Muhammad Farzan Hasani, Bijaya Ketan Panigrahi, Sanjib Kumar Panda: Optimal Power Flow Solution Using Self-Evolving Brain-Storming Inclusive Teaching-Learning-Based Algorithm. ICSI (1) 2013: 338-345
62. Manohar Singh, Bijaya K. Panigrahi, Abhijit R. Abhyankar, Rohan Mukherjee, Rupam Kundu: Optimal location, size and protection coordination of distributed generation in distribution network. SIS 2013: 221-227
63. Subhodip Biswas, Souvik Kundu, Digbalay Bose, Swagatam Das, Ponnuthurai N. Suganthan, Bijaya K. Panigrahi: Migrating forager population in a multi-population Artificial Bee Colony algorithm with modified perturbation schemes. SIS 2013: 248-255
64. Dipankar Maity, Aritra Chowdhury, S. Surender Reddy, Bijaya K. Panigrahi, Abhijit R. Abhyankar, Manas Kumar Mallick:

Joint energy and spinning reserve dispatch in wind-thermal power system using IDE-SAR technique. SIS 2013: 284-290

65. Bijaya Ketan Panigrahi, Ponnuthurai Nagaratnam Suganthan, Swagatam Das, Subhransu Sekhar Dash: Swarm, Evolutionary, and Memetic Computing - 4th International Conference, SEMCCO 2013, Chennai, India, December 19-21, 2013, Proceedings, Part I. Lecture Notes in Computer Science 8297, Springer 2013, ISBN 978-3-319-03752-3

66. Bijaya Ketan Panigrahi, Ponnuthurai Nagaratnam Suganthan, Swagatam Das, Subhransu Sekhar Dash: Swarm, Evolutionary, and Memetic Computing - 4th International Conference, SEMCCO 2013, Chennai, India, December 19-21, 2013, Proceedings, Part II. Lecture Notes in Computer Science 8298, Springer 2013, ISBN 978-3-319-03755-4

67. Tapan Kumar Gandhi, Prithwish Chakraborty, Gourab Ghosh Roy, Bijaya K. Panigrahi: Discrete harmony search based expert model for epileptic seizure detection in electroencephalography. Expert Syst. Appl. 39(4): 4055-4062 (2012)

68. K. R. Krishnanand, Ankita Mohapatra, Bijaya K. Panigrahi, Pravat Kumar Rout, Manas Kumar Mallick: Optimal short-term hydrothermal generation scheduling using modified seeker optimisation algorithm. IJMIC 15(4): 250-258 (2012)

69. Sayan Ghosh, Swagatam Das, Debarati Kundu, Kaushik Suresh, Bijaya K. Panigrahi, Zhihua Cui: An inertia-adaptive particle swarm system with particle mobility factor for improved global optimization. Neural Computing and Applications 21(2): 237-250 (2012)

70. Jeevanand Seshadrinath, Bhim Singh, Bijaya K. Panigrahi: Incipient turn fault detection and condition monitoring of induction machine using analytical wavelet transform. IAS 2012: 1-6

71. Anguluri Rajasekhar, Swagatam Das, Bijaya Ketan Panigrahi, Manas Kumar Mallick: Neighborhood Search Based Artificial Bee Colony Algorithm for Numerical Function Optimization. SEMCCO 2012: 232-239

72. Ankita Mohapatra, Bijaya Ketan Panigrahi, Bhim Singh, Ramesh Bansal: Optimal Placement of Capacitors in Distribution Networks Using a Modified Teaching-Learning Based Algorithm. SEMCCO 2012: 398-405

73. Almoataz Y. Abdelaziz, S. F. Mekhamer, H. M. Khattab, M. L. A. Badr, Bijaya Ketan Panigrahi: Gene Expression Programming Algorithm for Transient Security Classification. SEMCCO 2012: 406-416

74. Dipankar Maity, Udit Halder, Swagatam Das, Bijaya Ketan Panigrahi: On the Non Linear Dynamics of the Global Best Particle in Particle Swarm Optimization. SEMCCO 2012: 425-432
75. K. R. Ramanand, K. R. Krishnanand, Bijaya Ketan Panigrahi, Manas Kumar Mallick: Brain Storming Incorporated Teaching-Learning-Based Algorithm with Application to Electric Power Dispatch. SEMCCO 2012: 476-483
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78. Bijaya K. Panigrahi, Swagatam Das, Ponnuthurai Nagaratnam Suganthan, Pradipta Kumar Nanda: Swarm, Evolutionary, and Memetic Computing - Third International Conference, SEMCCO 2012, Bhubaneswar, India, December 20-22, 2012. Proceedings. Lecture Notes in Computer Science 7677, Springer 2012, ISBN 978-3-642-35379-6
79. Soumya R. Mohanty, V. Ravikumar Pandi, Bijaya K. Panigrahi, Nand Kishor, Prakash K. Ray: Performance evaluation of distance relay with CT saturation. Appl. Soft Comput. 11(8): 4789-4797 (2011)
80. V. Ravikumar Pandi, Bijaya K. Panigrahi: Dynamic economic load dispatch using hybrid swarm intelligence based harmony search algorithm. Expert Syst. Appl. 38(7): 8509-8514 (2011)
81. Sreejit Chakravarty, Pradipta K. Dash, V. Ravikumar Pandi, Bijaya K. Panigrahi: An Evolutionary Functional Link Neural Fuzzy Model for Financial Time Series Forecasting. IJAEC 2(3): 39-58 (2011)

Many more are available in http://dblp.uni-trier.de/pers/hd/p/Panigrahi:Bijaya_K=