

## Faculty Profile

### Dr. Bonomali Khuntia

Assistant Professor

Computer Science

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**Research Areas:** Machine learning/ Data Mining/Softcomputing

**Educational Qualification:** Ph.D. in Computer Science

**Work Experience:** 14 years of teaching and research

### Ph.D. Thesis Supervision:

Name of the Student	Title of the Thesis	Year of Completion
Santosh Kumar Sharma	Recommending Multilayer Security Approach for Internet of Things	Under adjudication
Pradeep KumarJena	Image Pattern Analysis using Machine Learning	Under Progress
SitanshuKar	Kinesthetic interaction detection(KID) for projection based HCI input systems	Under Progress
RadhaNathPatra	Early Diagnosis and Prognosis of Epidemic Diseases- A Meta Analysis using Soft Computing Approach	Under Progress

### Research Publications:

#### a) *International Journals*

1. S. S. Pattnaik, **B. Khuntia**, D. C. Panda, and S. Devi, "Calculation of optimized parameters of rectangular microstrip patch antenna using genetic algorithm", *Microwave and Optical Technology Letters*, USA, Vol. 23, No. 4, 20<sup>th</sup> June' 2003, pp. 431-433.
2. **B. Khuntia**, S. S. Pattnaik, D. C. Panda, D. K. Neog, S. Devi, and M. Dutta, "A Simple and Efficient Approach to Train Artificial Neural Networks by Genetic Algorithm for Calculating Resonant Frequency of RMA on Thick Substrate," *Microwave and Optical Technology Letters*, USA, Vol. 41, No. 4, 20<sup>th</sup> May' 2004, pp. 313-315.
3. D. K. Neog, S. S. Pattnaik, M. Dutta, S. Devi, **B. Khuntia** and D. C. Panda, "Inverted L-Shaped and Parasitically Coupled Inverted L-Shaped Microstrip Patch Antenna for wide Bandwidth," *Microwave and Optical Technology Letters*, vol. 42, no. 3, 5<sup>th</sup> Aug.' 2004, pp. 190-192.

4. S. S. Pattnaik, **B. Khuntia**, D. C. Panda, D. K. Neog, S. Devi, and M. Dutta, "Application of a genetic algorithm in an artificial neural network to calculate the resonant frequency of a tunable single-shorting-post rectangular-patch antenna," International Journal of RF and Microwave Computer-Aided Engineering, vol. 15, issue 1, 3<sup>rd</sup> Dec' 2004, pp. 140-144.
5. S. S. Pattnaik, **B. Khuntia**, D. C. Panda, D. K. Neog, S. Devi, and M. Dutta, "Genetic Algorithm with Artificial Neural Networks as its Fitness Function to Design Rectangular Microstrip Antenna on Thick Substrate", Microwave and Optical Technology Letters, vol. 44, no. 2, 20<sup>th</sup> Jan' 2005, pp. 144-146.
6. D. K. Neog, S. S. Pattnaik, D. C. Panda, S. Devi, **B. Khuntia**, and M. Dutta, "Design of Wide-band Microstrip antenna and use of Artificial Neural Network in the parameter calculation" IEEE Antennas and Propagation Magazine, Vol. 47, No. 3, June' 2005, pp. 60-65.
7. V Patro, **Bonomali Khuntia** and, ManasRanjanPatra "Quality Assessment of Web Services Using Soft Computing Techniques", Transactions on Networks and Communications. 3, 2015, 10.14738/tnc.31.958, 2015, pp. 59-68.
8. Baik, Namkyun& Kumar Sharma, Santosh &**Khuntia, Bonomali**. Encrusted security for internet of things using MAC-OMURA. International Journal of Control and Automation. 11. 45-54. 10.14257/ijca.2018.11.2.05., 2018. ISBN: 20054297.
9. P.P. Kumar, Sk. Sharma, **Bonomali Khuntia**, "Integrated Security Mechanism For Smart Applications using Feedback And Blowfish Cryptosystem", International Journal of Grid and Distributed Computing, Pp. 2178-2192, Vol 13 No. 1 (2020) -2020. (Indexed in Web of Science)
10. Sharma, Santosh Kumar and **Khuntia, Bonomali**. 'Integrated Security for Data Transfer and Access Control Using Authentication and Cryptography Technique for Internet of Things'. International Journal of Knowledge-based and Intelligent Engineering Systems, vol. 24, no. 4, Jan. 2020 : 303 – 309. (Published: 18 January 2021)

#### ***b) Book Chapters***

11. Sharma S.K., **Khuntia B.** (2020) Service Layer Security Architecture for IOT Using Biometric Authentication and Cryptography Technique. In: Reddy A., Marla D., Simic M., Favorskaya M., Satapathy S. (eds) Intelligent Manufacturing and Energy Sustainability. Smart Innovation, Systems and Technologies, vol 169. Springer, Singapore. DOI: [https://doi.org/10.1007/978-981-15-1616-0\\_80](https://doi.org/10.1007/978-981-15-1616-0_80), Print ISBN 978-981-15-1615-3, Online ISBN978-981-15-1616-0
12. Sharma S.K., **Khuntia B.** (2020) Distributed Authentication Security for IOT Using DASS and LOKI91. In: Jain V., Chaudhary G., Taplamacioglu M., Agarwal M. (eds) Advances in Data Sciences, Security and Applications. Lecture Notes in Electrical Engineering, vol 612. Springer, Singapore, DOI: [https://doi.org/10.1007/978-981-15-0372-6\\_14](https://doi.org/10.1007/978-981-15-0372-6_14).  
Print ISBN 978-981-15-0371-9  
Online ISBN 978-981-15-0372-6

### c) Conferences

13. S. Devi D. C. Panda, S. S. Pattnaik, **B. Khuntia**, and D. K. Neog, "Initializing Artificial Neural Networks by Genetic Algorithm to Calculate the Resonant Frequency of Single Shorting Post Rectangular Patch Antenna," *IEEE Proceedings Antennas and Propagation Society*, vol. 3, 2003, pp 144-147.
14. S. S. Pattnaik, D. C. Panda, **B. Khuntia**, S. Devi, and D. K. Neog, "Tunnel Based Artificial Neural Network to Calculate the Radiation Pattern of Cell Phone Antenna in Presence of Human Head," *IEEE-ASPW*, Delhi, 2002, pp.330-334.
15. D. C. Panda, S. S. Pattnaik, **B. Khuntia**, S. Devi, D. K. Neog, and R. K. Mishra, "Application of NFDTD for the Calculation of Parameters of Microstrip Antenna," *International Conference on Antenna Technologies*, ICAT, Ahmedabad, Feb. 21-22, 2005.
16. S. Devi, S. S. Pattnaik, **B. Khuntia**, D. C. Panda, M. Dutta, and D. K. Neog, "Design of Knowledge Based Continuous Genetic Algorithm to Train Artificial Neural Networks and its Application on Rectangular Microstrip Antenna," *International Conference on Antenna Technologies*, Ahmedabad, Feb. 21-22, 2005.
17. Sharma, Santosh Kumar, and **Bonomali Khuntia**. "A Survey on Layered Approach for Internet of Things Security." *Advanced Science and Technology Letters Vol.147 (SMART DSC-2017)*, pp.26-33 <http://dx.doi.org/10.14257/astl.2017.147.04>
18. Sharma, Santosh Kumar, and **Bonomali Khuntia**. "Performance optimization by using HSLD- A\*searching Technique in Hybrid Intrusion Prevention System", *Advanced Science and Technology Letters Vol.147 (SMART DSC-2017)*, pp.441-452 <http://dx.doi.org/10.14257/astl.2017.147.63>
19. S. S. Pattnaik, D. C. Panda, **B. Khuntia**, and S. Devi, "Calculation of Parameters of Microstrip Antenna Using Artificial Neural Networks," *Proceedings APSYM*, Cochin University, 2002, pp. 27-31.
20. S. S. Pattnaik, D. C. Panda, **B. Khuntia**, S. Devi, and D. K. Neog, "Tunnel Based Artificial to Calculate the Radiation Pattern of Commercially Available Cell Phone Antenna in Presence of Human Head Initialized by Genetic Algorithm," *Horizons of Telecommunication*, Institute of Radio Physics and Electronics, University of Calcutta, 2003.
21. S. Devi, S. S. Pattnaik, **B. Khuntia**, D. C. Panda, and D. K. Neog, "Design of Microstrip Antenna using Genetic Algorithm," *National Symposium on Antenna and Propagation (APSYM)*, Kochi, India, Dec. 2004.
22. **B. Khuntia**, Shyam S. Pattnaik, Malay Dutta, and S. Devi, "Design of Microstrip Antennas using Real-Coded Genetic Algorithm", *ADVANCE Proceedings, NITTTR, Chandigarh*, Feb' 2010.
23. **Bonomali Khuntia**, Basabadata Mohanty, "A Simple and Efficient Crossover Technique in Continuous Genetic Algorithm", *NSAICT 2013*, February 2013, pp. 110.
24. Sharma, Santosh Kumar, and **Bonomali Khuntia**. "A Survey on Layered Approach for Internet of Things Security." *Advanced Science and Technology Letters Vol.147 (SMART DSC-2017)*, pp.26-33 <http://dx.doi.org/10.14257/astl.2017.147.04>
25. Sharma, Santosh Kumar, and **Bonomali Khuntia**. "Performance optimization by using HSLD- A\*searching Technique in Hybrid Intrusion Prevention System", *Advanced Science and Technology Letters Vol.147 (SMART DSC-2017)*, pp.441-452 <http://dx.doi.org/10.14257/astl.2017.147.63>.

26. P.K. Jena, **B. Khuntia**, C. Palai and S.R. Pattanaik, "Content Based Image Retrieval using Adaptive Semantic Signature", I2CT 2019, IEEE Conference, Pune, Maharashtra, India, March 29-31, 2019.
27. P.K. Jena, **B. Khuntia**, C. Palai, A. Rahul, S. Patnaik "Significance of texture feature in NIR face recognition" ICPC2T 2020, IEEE Conference, NIT Raipur, Chhattisgarh, India, Jan 3-5, 2020.
28. RadhanathPatra and **Bonomali Khuntia**, "Analysis and Prediction Of Pima Indian Diabetes Dataset Using SDKNN Classifier Technique" 2021 *IOP Conf. Ser.: Mater. Sci. Eng.* 1070 012059

### **University Administration:**

Assistant Coordinator of Add-On Course On Computer Applications for Development Professionals	2015
Assistant Superintendent of Hostel	2020-2021
Assistant Director, Human Resource Development Centre	2018 onwards
Academic Counselor (Odisha State Open University)	2019 onwards
Director, Campus Automation and Networking	2020 onwards

### **Member of Committees in University and outside:**

Member of content development and documentation committee in IQAC  
 Member of NIRF  
 Member of PG Admission CPET 2020