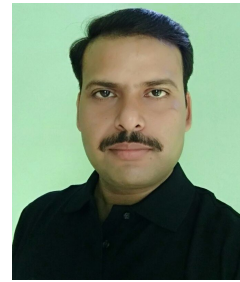


# Dr. VIKAS BAGHEL

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**Web of Science Profile:** <https://www.webofscience.com/wos/author/record/2369745>

## **Education**

2009-2014, **Doctor of Philosophy** (Radar Signal Processing)

**Indian Institute of Technology (IIT) Bhubaneswar, India**

Thesis Title: *Development and Performance Evaluation of a Class of Novel Radar Pulse Compression Techniques*

2007-2009, **Master of Technology** (Telematics and Signal Processing)

**National Institute of Technology (NIT) Rourkela, India**

Thesis Title: *Multiobjective Optimization - New Formulation and Application to Radar Signal Processing*

2003-2007, **Bachelor of Technology** (Electronics and Communication Engineering)

**Dr. K.N.M.I.E.T. Modinagar, Uttar Pradesh Technical University (UPTU) Lucknow, India**

## **Fellowships**

Government of India, **Research Fellowship**, October 2011-September 2013

Government of Canada, **DFAIT GSEP Fellowship**, April 2010-September 2010

Government of India, **DST Senior Research Fellowship**, October 2009-September 2011

Government of India, **GATE Fellowship**, July 2007-May 2009

## **Research Publications**

International Journals: 9

Book Chapter: 1

International Conference Proceedings: 18

## **Fields of Interest**

Radar Signal Processing, Array Signal Processing, Image Signal Processing, Machine Learning for Signal Processing, Digital Signal Processing, Soft Computing

## **Software and Hardware Skills**

MATLAB, LABVIEW, C, Embedded C, Python, ROS

Raspberry Pi, Arduino, IoT Sensors, Fire Bird V ATMEGA2560 Robot

# Dr. VIKAS BAGHEL

## Conferences / Workshop / Summer Training / FDP Organised

- Organised (Conference Chair) of “**3rd Emergent Converging Technologies and Biomedical Systems (ETBS 2023)**”, Jaypee University of Information Technology, Wagnaghat, May 15-17, 2023.
- Organised (Conference Chair) of “**2nd Emergent Converging Technologies and Biomedical Systems (ETBS 2022)**”, Jaypee University of Information Technology, Wagnaghat, September 23-24, 2022.
- Organiser of 10 days “**Online Workshop on Industrial Revolution 4.0**”, Jaypee University of Information Technology, Wagnaghat, July 3 – Sept. 4, (every Saturday) 2021.
- Organiser of One week “**Online Short Term Course on Recent Advances in Computational Intelligence for Signal Processing (RACISP-2020)**”, Jaypee University of Information Technology, Wagnaghat, August 10-15, 2020.
- Resource Person and Faculty incharge of One week “**Summer Training Program for ECE Lab Staff**”, Jaypee University of Information Technology, Wagnaghat, May 27 – June 2, 2019.
- Coordinator and Resource Person of “**Summer Workshop on Matlab and Labview**”, JSS Academy of Technical Education, Noida, June 17 -20, 2014

## Research Guidance

Ph. D. (Joint Guidance): 02 (ongoing)

M. Tech. (Joint Guidance): 01 (completed)

B. Tech: 08 (completed), 02 (ongoing)

## Professional Society Membership

Senior Member, IEEE (Membership No.: 90791495)

Member, IEI (Membership No.: M-1782457)

Life Time Member, IAENG (Membership No.: 171615)

## Publications (In Peer Reviewed Journals)

1. D. Thakur, V. Baghel, S. R. Talluri, “Improvements in sparse array based beamformer via additional constraints”, International Journal of Computing and Digital Systems, 14 (1), 719-727, 2023.  
(Scopus Indexed, ISSN: 2210-142X, CiteScore: 1.7)
2. D. Thakur, V. Baghel, S. R. Talluri, “A dual beam adaptive beamforming algorithm with sidelobe suppression”, Measurement: Sensors, 24 (100514), 1-8, 2022.  
(Scopus Indexed, ISSN: 2665-9174, CiteScore: 0.9)
3. D. Thakur, V. Baghel, S.R. Talluri, “Proximal gradient method based robust Capon beamforming against large DOA mismatch”, Frequenz, 75(7-8), 259-266, 2021.  
(SCIE, Scopus Indexed, ISSN: 2191-6349, CiteScore:1.7)
4. D. Thakur, V. Baghel, S.R. Talluri, “Design of an Efficient Wideband Beamformer using OPSO”, International Journal of Innovative Technology and Exploring Engineering (IJITEE), 8(11), 2144-2152, September 2019.  
(Scopus Indexed, ISSN: 2278-3075, CiteScore: 0.6)
5. V. Baghel, “Adaptive Mismatched Filter Design for Radar Pulse Compression”, Journal of Engineering Science & Technology, 14(3), 1361–1373, June 2019.  
(ESCI, Web of Science, Scopus Indexed, ISSN: 1823-4690, CiteScore: 1.5)
6. B. Majhi, M. Rout, V. Baghel, “On the Development and Performance Evaluation of a Multiobjective GA-based RBF Adaptive Model for the Prediction of Stock Indices”, Elsevier

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- Journal of King Saud University - Computer and Information Sciences, 26(3), 319–331, September 2014. (SCI, ISSN: 1319-1578, CiteScore: 6.9)
7. **V. Baghel**, G. Panda, “Development and Performance Evaluation of Generalised Doppler Compensated Adaptive Pulse Compression Algorithm”, IET Radar, Sonar & Navigation, 8(4), 297 – 306, April 2014. (SCI, ISSN: 1751-8784, IF: 1.908, CiteScore: 4.2)
  8. **V. Baghel**, G. Panda, “Development and Performance Evaluation of an Improved Complex Valued Radar Pulse Compressor”, Elsevier Engineering Applications of Artificial Intelligence, 26(10), 2653–2660, November 2013. (SCI, ISSN: 0952-1976, IF: 4.201, CiteScore: 12.3)
  9. **V. Baghel**, G. Panda, “Development of an Efficient Hybrid Model for Range Sidelobe Suppression in Pulse Compression Radar”, Elsevier Aerospace Science and Technology, 27(1), 156–162, June 2013. (SCI, ISSN: 1270-9638, IF: 4.499, CiteScore: 10.1)

### **Publications (In Book Chapters)**

1. D. Munish Bhardwaj, Nafis Uddin Khan, Vikas Baghel , Santosh Kumar Vishwakarma, Abul Bashar, “Brain Tumor Image Segmentation using K-Means and Fuzzy C-Means Clustering”, In Digital Image Enhancement and Reconstruction 1st, pp. 293-316 India: Elsevier Science. [ISBN : 9780323985789], 2023.

### **Publications (In International Conference Proceedings)**

1. Munish Bhardwaj, Nafis uddin Khan, **Vikas Baghel**, “Improved Road Crack Detection using Histogram Equalization based Fuzzy-C Means Technique”, in proc. of IEEE Proceedings of 7<sup>th</sup> International Conference on Parallel, Distributed and Grid Computing (PDGC), 547-551, 25-27 November 2022.
2. D. Thakur, **V. Baghel**, S.R. Talluri, “Robust Beamforming Against DOA Mismatch with Null Widening for Moving Interferences”, In Thampi S.M., Krishnan S., Hegde R.M., Ciunzo D., Hanne T., Kannan R. J., Advances in Signal Processing and Intelligent Recognition Systems (pp. 290-301). : Springer. [ISBN : 978-981-16-0425-6], 2021.
3. Diksha Thakur, **V. Baghel**, Salman Raiu Talluri, “Robust Beamforming against Mismatched Signal Steering Vector using Ellipsoidal Constraints”, in proc. of IEEE 2020 Sixth International Conference on Parallel, Distributed and Grid Computing (PDGC), 303-307, 6-8 November 2020.
4. **V. Baghel**, “A Survey on Maximum Power Point Algorithms for PV System”, in IEEE proc.of International Conference on Electronics, Communication and Aerospace Technology (ICECA), Coimbatore, India, 84-88, 29-31 March 2018.
5. **V. Baghel**, “Efficient Pulse Compression using Convolutional Neural Network”, in proc. of International Conference on Advance Studies in Engineering and Sciences (ICASSES), Sehore, India, 109-114, 2 December, 2017.
6. **V. Baghel**, Y. Agrahari and C.K. Maurya, “Design of Pulse Compression Filter using Complex Valued Multilayer Feedforward Neural Network”, in proc. of International Conference on Emerging Technologies in Science, Engineering and Management (ICETSEM-2016), Ghaziabad, India, 1-3, 23-24 April 2016.
7. **V. Baghel**, G. Panda and S.K. Verma, “Efficient Design of Radar Waveforms using Novel Multiobjective Optimization Technique”, in IEEE proc. of International Conference on Recent Advances in Engineering and Computational Sciences (RAECS), Chandigarh, India, 1-5, 21-22 December 2015.
8. A. K. Samal, **V. Baghel**, S. K. Pani, S. Panda, and A. Panda, “Fault-Tolerant Scheduling of Real-Time Tasks on Multiprocessor based Systems using PSO”, in Proc. of International Conference on Communication and Computer Networks of the Future (COMNET 2014), Computer Society of India, 14-15 March 2014, Coimbatore, India.

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9. A.K. Samal, S. Panda, **V. Baghel**, G.Panda, "ACO and GA based Fault-Tolerant Scheduling of Real-Time Tasks on Multiprocessor Systems – A Comparative Study", IEEE International Conference on Intelligent Systems and Control (ISCO), 120-126, 10-11 January 2014, Coimbatore, India.
10. **V. Baghel**, A. Panda, G. Panda, "An efficient hybrid adaptive pulse compression approach to radar detection", in IEEE Proc. of International Conference on Signal Processing and Communication (ICSC), 376-380, 12-14 Dec 2013, Noida, India.
11. A.K. Samal, S. Panda, **V. Baghel**, G. Panda, "Fault-Tolerant scheduling of real-time tasks on multiprocessor using ant colony optimization", in Proc. of International Conference on Computing and Systems (ICCS – 2013), 143-153, 21-22 September 2013, Burdwan, West Bengal, India.
12. **V. Baghel**, G. Panda, L. Mansinha, K.F. Tiampo, S.R. Valluri, "Enhancement of the frequency resolution of the S-transform using the Fourier transform", in IEEE Proc. of International Conference on Energy, Automation, and Signal (ICEAS), 1-5, 28-30 December 2011, Bhubaneswar, India.
13. **V. Baghel**, S. J. Nanda, G. Panda, "New GOPSO and its application to robust identification", in IEEE Proc. of International Conference on Energy, Automation, and Signal (ICEAS), 1-6, 28-30 December 2011, Bhubaneswar, India.
14. D. Ranganadham, **V. Baghel**, D.R. Poddar, R.K. Mishra, "Development and Performance Evaluation of an Efficient Multimedia Communication Scheme Using DWT and Adaptive Channel Equalization", in IEEE Proc. of International Conference on Advances in Computer Engineering (ACE), 64-68, 21-22 June 2010, Bangalore, India.
15. A. Sailaja, A.K. Sahoo, G. Panda, **V. Baghel**, "A Recurrent Neural Network Approach to Pulse Radar Detection", in IEEE Proc. of India Conference (INDICON), 1-4, 18-20 December 2009, Ahmedabad, India.
16. **V. Baghel**, G. Panda, P. Srihari, K. Rajarajeswari, B. Majhi, "An efficient multi-objective pulse radar compression technique using RBF and NSGA-II", in IEEE Proc. of World Congress Nature & Biologically Inspired Computing (NaBIC), 1291-1296, 9-11 December 2009, Coimbatore, India.
17. **V. Baghel**, G. Panda, P. Srihari, K. Rajarajeswari, "Performance Evaluation of Phase Coded Radar Signals using Functional Link Artificial Neural Network", in Proc. of International Radar Symposium India (IRSI-2009), 8-11 December 2009, Bangalore, India.
18. P.M. Pradhan, **V. Baghel**, G. Panda, M. Bernard, "Energy efficient layout for a wireless sensor network using multi-objective particle swarm optimization", in IEEE Proc. of International Advance Computing Conference (IACC), 65-70, 6-7 March 2009, Patiala, India.