Haider Banka

Associate Professor, Department of CSE, IIT(ISM) Dhanbad

CSE/faculty Hall- 122, IIT(ISM) Dhanbad
Jharkhand, India - 826004
haider@iitism.ac.in | haider.banka@gmail.com
Webpage : https://www.iitism.ac.in/index.php/computer_science/csefaculty
Phone : +91-326-2235785(C) | +91-326-2235273(O)

Education

Jadavpur University, West Bangal, India
Ph. D., Computer Science & Engineering (2006- 2008)

University of Calcutta, West Bangal, India
Masters (M. Tech.), Computer Science & Engineering (2001- 2003)

University of Calcutta, West Bangal, India
Masters (M. Sc.), (1999- 2001) & *Bachelor (B. Sc.)*, (1996- 1999) in Computer Science

West Bengal council Board for Secondary & Higher Secondary Education, WB, India
Certificate for Secondary (1991- 1993) & Higher Secondary Education (1993- 1995)

Research Interests

Soft Computing, Machine Learning, Data Mining, Nature Inspired Computing, Artificial Neural Networks, Fuzzy Logic & Rough Sets and some other related subjects of Computer Science & Engineering.

Experience of employment(s)

Teaching:

- Lecturer & Sr. Lecturer in *Dr. BCROY Engg. College, Durgapur, WB, India*, from 15/01/2003 to 31/03/2004 (1 yr. 2 month)
- Asst. Professor in *IIT(ISM) Dhanbad*, from 3/12/2007 to 21/05/2013 (5yrs. 9 months)
- Assoc. Professor in *IIT(ISM) Dhanbad*, from 22/05/2013 to Till date (5yrs +)

Research:

- Workd as SRF in *MIU, ISI KOLKATA*, from 14/4/2004 to 31/3/2006 (2yrs)
- Workd as Research Associate in *DISI, Univ. of Geneva, Italy*, from 05/04/207 to 05/07/2007 (3 months)
- Workd as Vis. Researcher in *CSCR, ISI KOLKATA* , from 31/6/2006 to 31/8/2007 (1 yr. 2 month)
- Workd as Visiting Asst. Professor in *CSCR, ISI KOLKATA*, from 30/08/2007 to 30/11/2007 (3 months)

Awards & Achievements

Awarded the **EU-INDIA fellowship**, Department of Computer and Information Science (DISI), **University of Genova, Italy**, *April 2006 to July 2006*

Visiting Research Fellowship at Centre for Soft Computing Research (ISI Kolkata) funded by Department of Science & Technology (DST), *July 2006 to August 2007*

INAE Teacher Mentoring Fellowship funded by Indian National Academy of Engineering (INAE), *June 2008 to July 2008*

Scientific Research

CSIR project entitled *Design of Machine Learning Techniques for Specialized Biological Online Database-Mining*, Project No- CSIR(11)/2012-2013/314/CSE, sanctioned vide **letter No. 22(0586)/12/EMR-II** for **Rs. 16,05,000.00/- only**, Completed (2012- 2015).
Role: Principal Investigator.

DRDO project entitled *Energy Efficient Intruder Detection Schemes for WSN using Learning Based Techniques*, Project No- DRDO (2)/2015-2016/431/CSE, sanctioned vide **letter No. ERIP/ER/1402239/M/01/1584** for **Rs. 28,52,000.00/- only**, Completed (2015- 2018).
Role: Co-Principal Investigator

Patent

A practical approach for coal fire prevention and its prediction integrating machine learning and statistics in opencast mines working over developed pillars, Satish Kumar Sinha, D.C. Panigrahi, Haider Banka, March 2015, **(Patent Application No. 305/KOL/2015)**.

Automated position and latch locking control mechanism using mobile application, Srijan Varma, Prateek Kumar. Haider Banka, March 2016 **(Ref. No. E-12/30/2016-KOL, Appl. No. 201631007292).**

Administrative Support Work

- *Head of the department(H.O.D) in CSE department* from 7/06/2018 to Till Date.
- *Member, DSC (Doctoral Secruitiny Commettie)* from 2012 to Till date
- *BOCS member* from 2013 to Till date
- *Co-ordinator, 3 yr. M.Tech. Program* from 2015 to Till date
- *Member house allotment Committee* from May 2016 to August 2018
- *Co-ordinator for JRF* from 2015 to June 2018
- *Coordinator TEQIP-II & TEQIP-III* from Oct-2013 to June 2018
- *Secretary in Dept. Advisory Committee* from 2008 to June 2018.
- *Co-ordinator Intr. Inchange Program (Erasmus Mundus Euphrates)* from 2014 to 2016
- *Time table incharge* from 2009 to 2014
- *Tabulator of Examination* from 2009 to 2011

consultation Services

Organized Short term course on *"Network Protocols and their Simulation using NS-2/NS-3* **(Consultancy No. CONS/2934/2015-16),** 19-23 August, 2015, (No. of Participants: 35, Total Amount Rs. 205000), *Role: Co-Coordinator*

Organized Short term course on *"Fundamentals of Soft Computing and Its Applications* **(Consultancy No. CONS/2956/2015-16)**, 09-13 September, 2015 (No. of Participants: 51, Total Amount Rs. 192000), *Role: Coordinator.*

Short term course on *"Nature Inspired Computing and its Applications*, held on 08-12 February 2016, *Role: Coordinator.*

Organized Short term course on *"Network Protocols & Their Simulations using NS2"* held on 9-13 September 2015, (Self Financed).

Organizing Participation training workshops

Organized First IEEE International Conference on Recent Advances in Information Technology (RAIT-12) during March 2012 at ISM Dhanbad.

Organizing Third IEEE International Conference on Recent Advances in Information Technology (RAIT-16) to be held on March 2016 at ISM Dhanbad.

Organized two Guest Lectures on Ubiquitous computing and Insights into key industries and How to tie-up your Coding Goal to Business Goal on 19.1.2014 under TEQIP-II at Penman Auditorium, ISM Dhanbad (Coordinator).

Organized Guest Lecture on 21 August 2015 under TEQIP-II at NLHC on How to work on Network Simulator at ISM Dhanbad (Coordinator).

Organized Short term course on *"Ubiquitous computing and Insights into key industries" (CI)*, TEQIP II Sponsored, held on 19 January 2014.

Membership in Professional bodies

- IEEE membership
- IAENG membership (Life Member)

Seminar Invited Talks

- Department of Information Science (DISI), University of Genoa, Italy, August, 2006
- Invited Talk on National Seminar on Data Mining and Decision Support (DMDS) during (4-5)th March, 2010, organized by Computer Centre, Vidya Sagar University, Midnapore.
- Invited talk at TIT Agartala for Staff Development Program, 11-13 July, 2011
- Presentation at DEXA, Austria, Viena, (BIOKDD), 3-5 September, 2012
- Invited Talk on AICTE sponsored Staff Development Programme on Soft computing in Bioinformatics from July (11-21), 2011 in Tripura Institute of Technology, Agartala. Tripura, 2011.
- Invited Talk on Nature Inspired Computing, Sponsored by UGC for National Seminar on Quatum Information Theory and Computer Science, organized by Jogesh Chandra Chaudhuri College, Kolkata during 14-15 February, 2012
- Invited talk on Faculty Development Program on Pattern Recognition and its Applications sponsored by AICTE, 15th July, 2013
- Invited talk on Data Warehousing for the workshop during 23-25 September, 2013 at BCET, ODISHA, India.
- Invited talk on Improving Equipment Utilization by Applying Machine Intelligence during 10 January, 2014 at IICM, Ranchi, India.
- Invited talk on Soft Computing and Applications, 5 March, 2014 at NIT Durgapur, India.
- Participated and presented papers : in the 6th International Conference of the Association of the Asia Pacific Operational Research Societies (APORS 2003), New Delhi, 8-11 December, 2003
- Computers and Devices for Communication (CODEC-04)
- Advanced Computing & Communication Technologies (ICACCT-2012)
- DEXA 2012 3-6 September, 2012, Austria
- ICCRC 2011, 21-23 March, 2011, New Delhi
- RAIT-2009, 6-7 2009, ISM Dhanbad

Training Courses Attended

- Attended Two weeks short term course on Robotics and Automation held at IIT Kanpur during July 7-18, 2003
- Attended two days International workshop on Algorithm (IWA) during 15-16 December, 2005, held at Indian Statistical Institute, Kolkata
- Attended 1 week Winter School on Soft Computing Tools, Simulation and Applications, during 10- 14 January, 2006, held at Centre for Soft Computing Research, Kolkata.
- Participated 1 week SERC School on Advanced Software Engineering Techniques and Their Applications, funded by DST during 4-8 June, 2012 held at NIT Rourkela.
- Participated 1 week course on Programmable Logic Controller (PLC) Programming, Applications and Troubleshooting during 04-09 October, 2013 held at ISM Dhanbad
- Participated 2 days workshop on Embedded System Design using MSP430 Micro-controller during 14-15 February, 2014 held at ISM Dhanbad.

Practicing Activities

- Coordinator, International Exchange Program (Erasmus Mundus Euphrates)
- Secretary, Departmental Advisory Committee (DAC) since 2008.
- Departmental Coordinator, TEQIP-II Program, since 2013
- Co-coordinator of 3yrs. M. Tech. Course in CSE, for ISM Industry Institute Interaction Centre.
- Faculty in charge for ISM JRFs Full time, since 2014
- Time Table In-charge, Dept. of CSE & Central Time Table committee during 2008-2013, to arrange schedule of subjects for other as well as own departments for smooth functioning of the institute & departments
- Tabulator of Examination, Manipulate/Prepare Results of the B. Tech. & M. tech. Examination during 2009 2011
- Member, Departmental purchase Committee, To fulfil departmental requirements, 2012
- Reviewer of many international journals such as IEEE Trans. on SMC: Part A, B, C, Pattern Recognition, IJPRAI, PRL, ICPR, IJCNN etc.
- Member, ISM House Allotment Committee, since May, 2016

Ph.D. Supervised

Suresh Dara (Regn. No. 2012DR0023), Awarded 2015
Title of thesis: Evolutionary computation for feature selection, classification, and validation from high-dimensional data

Manoj Kumar Shukla (Regn. No. 2012DR1088), Awarded 2015
Title of thesis: Degraded Script Identification of Devanagari and Bangla script

Baijnath Kaushik (Regn. No. 2013DR1106), Awarded 2014
Title of thesis: Degraded Script Identification of Devanagari and Bangla Performance evaluation using approximated ANNS for solving some reliability problems in complex networks

Mohammad Nadeem, (Reg. No: 2013DR0059), Awarded 2015
Title of thesis: Designing Soft Computing Techniques for Parameter Estimation and Optimization for Pelletization

Annavarapu Chandra Sekhara Rao, (Reg. No: 2013DR1042), Awarded 2016
Title of thesis: Analysis and Synthesis of Public Bioinformatic data using Datamining and Machine Learning Techniques

P. CHJ. Srinivasa Rao (Regn. No. 2012DR0152), Awarded 2017
Title of thesis: Degraded Script Identification of Devanagari and Bangla Performance evaluation

using approximated ANNS for solving some reliability problems in complex networks

Rohit Kumar Yadav, (Reg. No: 2012DR0132), Awarded 2017
Title of thesis: Design of Soft Computing Methodologies for Bioinformatics Problems

Praveen Lalwani, (Reg. No: 2014DR0023), Awarded 2017
Title of thesis: Study and Investigation of routine protocols for Wireless Network using Soft Computing

Abeg Kumar Jaiswal, (Reg. No: 2014DR0249), Awarded 2017
Title of thesis: Pattern Recognition and Classification of EEG Signals using Machine Learning

In addition, 07 Full Time and 4 Part time Scholars are currently guiding

Books Published

Soft Computing for Machine Learning and Bioinformatics, Verilog Dr. Muller Publication, Mauritius, Germany, June 2010.

Feature selection in High dimensional data using meta-heuristic, H. Banka & Suresh Dara, Lambert Acad. Pub., 2017

Proceedings of the Third IEEE International Conference on Recent Advances in Information Technology, Vol. I & Vol. II (IEEE Conference) Dr. C. Kumar & Dr. H. Banka Vol. I- 582 (pages), Vol. II- 581(pages), Cygnus, India, March, 2012.

Proceedings of the First IEEE International Conference on Recent Advances in Information Technology, Vol. I & Vol. II, Dr. C. Kumar & Dr. H. Banka and D. Ramesh, Vol. I- & Vol. II IEEE X-Plore, India, March, 2016.

Selected Journal Publications

1. S. Mitra, **H. Banka** and W. Pedrycz, "Rough-fuzzy collaborative clustering", ***IEEE Transactions on Systems, Man, and Cybernetics,*** *Part B: 36, (3) 2006.*
2. Sushmita Mitra, **Haider Banka**: Multi-objective evolutionary biclustering of gene expression data. ***Pattern Recognition*** *39(12): 2464-2477, 2006*
3. Mohua Banerjee, Sushmita Mitra, **Haider Banka**: Evolutionary Rough Feature Selection in Gene Expression Data. ***IEEE Transactions on Systems, Man, and Cybernetics****, Part C 37(4): 622-632, 2007.*
4. Sushmita Mitra, **Haider Banka**: Application of Rough Sets in Pattern Recognition. ***Transactions on Rough Sets****, 151-169 (2007).*
5. S. Mitra, R. Das, **H. Banka**, and S. Mukherjee, "Gene Interaction: An Evolutionary Biclustering Approach, ***Information Fusion****, vol. 10, pp 242- 249, 2009.*
6. Kaushik, Baijnath, and **Haider Banka**. "Performance evaluation of approximated artificial neural network (AANN) algorithm for reliability improvement." ***Applied Soft Computing*** *26, 303-314, 2015.*
7. **Haider Banka**, and Suresh Dara. "A Hamming distance based binary particle swarm optimization (HDBPSO) algorithm for high dimensional feature selection, classification and validation." ***Pattern Recognition Letters****, 52, 94-100, 2015.*
8. P. CH Srinivas, **H. Banka**, Energy Efficient Clustering Algorithms for Wireless Sensor Networks: Novel Chemical Reaction Optimization Approach, ***Wireless Networks (WINE)****, 2015.*

9. **Haider Banka**, Santosh Kr. Ray and D. C. Panigrahi, "Standardization of a method for studying susceptibility of Indian coals to self-heating, ***Arabian Journal of Geosciences****, 2016.*
10. P. CH Srinivas, **H. Banka**, "Novel Chemical Reaction Optimization based Unequal Clustering and Routing Algorithms for Wireless Sensor Networks, ***Wireless Networks (WINE)****, 2016.*
11. Rao, P. C. Srinivasa, P K Jana, and **Banka, H.**, A particle swarm optimization based energy efficient cluster head selection algorithm for wireless sensor networks, ***Wireless Networks****, 2016.*
12. Mohammad Nadeem, **Haider Banka**, R. Venugopal,"SVM-based predictive modelling of wet pelletization using experimental and GA-based synthetic data, ***Arabian Journal for Science and Engineering****, 2016*
13. Rohit Kumar Yadav, **Haider Banka**, "An Improved Chemical Reaction Based Approach for Multiple Sequence Alignment Indian Acad Science, ***Current Science, (Thomson Reuter)****, 2016*
14. Mohammad Nadeem, **Haider Banka**, R. Venugopal, "A neural network-based approach for steady-state modelling and simulation of continuous balling process, ***Soft Computing****, 2016, (Springer)*
15. Singh, Jayraj, A. K. Verma, **Haider Banka**, T. N. Singh, and Sachin Maheshwar."A study of soft computing models for prediction of longitudinal wave velocity." ***Arabian Journal of Geosciences****, no. 3 (2016): 224.*
16. Nadeem, Mohammad, **Haider Banka**, and R. Venugopal. "Estimation of pellet size and strength of limestone and manganese concentrate using soft computing techniques." ***Applied Soft Computing****, 59 (2017): 500-511.*
17. Lalwani, Praveen, Haider Banka, and Chiranjeev Kumar. "CRWO: Clustering and routing in wireless sensor networks using optics inspired optimization." ***Peer-to-Peer Networking and Applications****, no. 3 (2017): 453-471.*
18. Jaiswal, Abeg Kumar, and **Haider Banka**. "Local transformed features for epileptic seizure detection in EEG signal." ***Journal of Medical and Biological Engineering****, (2017): 1-14.*
19. Jaiswal, Abeg Kumar, and **Haider Banka**. "Local pattern transformation based feature extraction techniques for classification of epileptic EEG signals." ***Biomedical Signal Processing and Control****, 34 (2017): 81-92*
20. Sahoo, Tapan Kumar, and **Haider Banka**."New hybrid PCA-based facial age estimation using inter-age group variation-based hierarchical classifier." ***Arabian Journal for Science and Engineering****, 42, no. 8 (2017): 3337-3355.*
21. Lalwani, Praveen, Haider Banka, and Chiranjeev Kumar. "BERA: a biogeography-based energy saving routing architecture for wireless sensor networks." ***Soft Computing*** *, 22 no. 5 (2018): 1651-1667.*
22. Lalwani, Praveen, Sagnik Das, Haider Banka, and Chiranjeev Kumar. "CRHS: clustering and routing in wireless sensor networks using harmony search algorithm." ***Neural Computing and Applications****, 30 no. 2 (2018): 639-659.*
23. Jaiswal, Abeg Kumar, and **Haider Banka**. "Epileptic seizure detection in EEG signal using machine learning techniques." ***Australasian physical & engineering sciences in medicine****, 41, no. 1 (2018): 81-94.*
24. Singh, J., **Banka H.**. and Verma, A.K. "A BBO-based algorithm for slope stability analysis by locating critical failure surface. ***Neural Computing and Applications****,(2018) pp.1-18.*
25. Huda, R.K. and **Banka H.** "Efficient feature selection and classification algorithm based on PSO and rough sets.***Neural Computing and Applications****,(2018) pp.1-17.*

26. Sahoo, T.K. and **Banka H.** "Multi-feature-Based Facial Age Estimation Using an Incomplete Facial Aging Database.***Arabian Journal for Science and Engineering****, pp.1-22, 2018*

27. Pradhan, Jitesh, Arup Kumar Pal, and **Haider Banka**. "Principal texture direction based block level image reordering and use of color edge features for application of object based image retrieval." ***Multimedia Tools and Applications****, (2018): 1-33.*

Selected conferences papers/ Book chapters

1. Mitra, Sushmita, **Haider Banka**, and Witold Pedrycz. "Collaborative rough clustering." In International Conference on Pattern Recognition and Machine Intelligence, pp. 768-773. Springer, Berlin, Heidelberg, 2005. [*Book chapter*]
2. Mitra, Sushmita, **Haider Banka**, and Sankar K. Pal. "A MOE framework for biclustering of microarray data." In Pattern Recognition, 2006. ICPR 2006. 18th International Conference on, vol. 1, pp. 1154-1157. IEEE, 2006.
3. **Haider Banka**, and Sushmita Mitra. "Soft Computing in Biclustering." Introduction to Machine Learning and Bioinformatics (2008): 277. [*Book chapter*]
4. **Haider Banka** and Suresh Dara. "Feature Selection and Classification for Gene Expression Data Using Evolutionary Computation." In Database and Expert Systems Applications (DEXA), 2012 23rd International Workshop on, pp. 185-189. IEEE, 2012.
5. Filippone, Maurizio, Francesco Masulli, Stefano Rovetta, Sushmita Mitra, and **Haider Banka**. "Possibilistic approach to biclustering: An application to oligonucleotide microarray data analysis." In International Conference on Computational Methods in Systems Biology, pp. 312-322. Springer, Berlin, Heidelberg, 2006. [*Book chapter*]
6. Das, Ranajit, Sushmita Mitra, **Haider Banka**, and Subhasis Mukhopadhyay. "Evolutionary biclustering with correlation for gene interaction networks." In International Conference on Pattern Recognition and Machine Intelligence (PReMI), pp. 416-424. Springer, Berlin, Heidelberg, 2007.
7. Mitra, Sushmita, **Haider Banka**, and Jiaul Hoque Paik. "Evolutionary fuzzy biclustering of gene expression data." In International Conference on Rough Sets and Knowledge Technology, pp. 284-291. Springer, Berlin, Heidelberg, 2007. [*Book chapter*]
8. **Haider Banka**, and Sushmita Mitra. "Feature selection, classification and rule generation using rough sets." In Rough Sets: Selected Methods and Applications in Management and Engineering, pp. 51-76. Springer, London, 2012.
9. Rao, A. Chandra Sekhara, Durvasula VLN Somayajulu, and **Haider Banka**. "Modified correlation based technique in micro array data analysis for searching differentially expressed genes." In Recent Advances in Information Technology (RAIT), 2012 1st International Conference on, pp. 526-530. IEEE, 2012.
10. Rao, A. Chandra Sekhara, D. V. L. N. Somayajulu, **Haider Banka**, and Sawrav Roy. "Feature binding technique for integration of biological databases with optimized search and retrieve." Procedia Technology 6 (2012): 622-629. [*Book chapter*]
11. Rao, A. Chandra Sekhara, D. V. L. N. Somayajulu, **Haider Banka**, and Rohit Chaturvedi. "Outlier detection in microarray data using hybrid evolutionary algorithm." *Procedia Technology 6 (2012): 291-298.*[*Book chapter*]
12. Elloumi, Mourad, Costas S. Iliopoulos, Jason TL Wang, Albert Y. Zomaya, Colette Faucher, Mohammed S. Rahman, **Haider Banka** et al. "BIOKDD 2013".
13. Dara, Suresh, and **Haider Banka**. "A binary PSO feature selection algorithm for gene expression data." Advances in Communication and Computing Technologies (ICACACT), 2014 International Conference on. IEEE, 2014. [*Book chapter*]
14. Dara, Suresh, and **Haider Banka**. "An Elitist Binary PSO Algorithm for Selecting Features in High Dimensional Data." Advanced Computing, Networking and Informatics-Volume 1. Springer International Publishing, 2014. 679-686.

15. Rao, PC Srinivasa, **Haider Banka**, and Prasanta K. Jana. "Energy Efficient Clustering for Wireless Sensor Networks: A Gravitational Search Algorithm." In International Conference on Swarm, Evolutionary, and Memetic Computing, pp. 247-259. Springer, Cham, 2015.
16. Rao, Annavarapu Chandra Sekhara, Suresh Dara, and **Haider Banka**. "An Improved Quantum Inspired Immune Clone Optimization Algorithm ". In International Conference on Swarm, Evolutionary, and Memetic Computing, pp. 84-91. Springer, Cham, 2015.
17. Rao, PC Srinivasa, **Haider Banka**, and Prasanta K. Jana. "A gravitational search algorithm for energy efficient multi-sink placement in wireless sensor networks." In International conference on swarm, evolutionary, and memetic computing, pp. 222-234. Springer, Cham, 2015.
18. Yadav, Rohit Kumar, and **Haider Banka**. "Genetic Algorithm with Improved Mutation Operator for Multiple Sequence Alignment." Information Systems Design and Intelligent Applications. Springer India, 2015. 515-523. [*Book chapter*]
19. Yadav, Rohit Kumar, and **Haider Banka**. "A Hybrid Genetic Algorithm Using Dynamic Distance in Mutation Operator for Solving MSA Problem". In International Conference on Swarm, Evolutionary, and Memetic Computing, pp. 274-286. Springer, Cham, 2015.
20. P. CH Srinivas, **H. Banka**, and Prasanta K. Jana. "PSO-Based Multiple-sink Placement Algorithm for Protracting the Lifetime of Wireless Sensor Networks." InProceedings of the Second International Conference on Computer and Communication Technologies, pp. 605-616. Springer India, 2016.
21. Yadav, Rohit Kumar, and **Haider Banka**. "A PSO with Improved Initialization Operator for Solving Multiple Sequence Alignment Problems." Proceedings of the 4th International Conference on Frontiers in Intelligent Computing: Theory and Applications (FICTA) 2015. Springer India, 2016.
22. Yadav, Rohit Kumar, and **Haider Banka**. "Genetic Algorithm Using Guide Tree in Mutation Operator for Solving Multiple Sequence Alignment."Advanced Computing and Systems for Security. Springer India, 2016. 145-157.
23. Kaushik, Baijnath, and **Haider Banka**. "Solving Reliability Problems in Complex Networks with Approximated Cuts and Paths." Proceedings of 3rd International Conference on Advanced Computing, Networking and Informatics. Springer India, 2016.
24. Alam, Manaar, Soumyajit Chatterjee, and **Haider Banka**. "A novel parallel search technique for optimization." In Recent Advances in Information Technology (RAIT), 2016 3rd International Conference on, pp. 259-263. IEEE, 2016.
25. Seth, Himanshu Ranjan, and **Haider Banka**. "Hardware implementation of Nave Bayes classifier: A cost effective technique." In Recent Advances in Information Technology (RAIT), 2016 3rd International Conference on, pp. 264-267. IEEE, 2016.
26. Lalwani, Praveen, Isha Ganguli, and **Haider Banka**. "FARW: Firefly algorithm for Routing in wireless sensor networks." In Recent Advances in Information Technology (RAIT), 2016 3rd International Conference on, pp. 248-252. IEEE, 2016.
27. Pradhan, Jitesh, Arup Kumar Pal, and **Haider Banka**. "A prominent object region detection based approach for CBIR application." In Parallel, Distributed and Grid Computing (PDGC), 2016 Fourth International Conference on, pp. 447-452. IEEE, 2016.
28. Singh, Jayraj, A. K. Verma, and **Haider Banka**. "Application of biogeography based optimization to locate critical slip surface in slope stability evaluation." In 2018 4th International Conference on Recent Advances in Information Technology (RAIT), pp. 1-5. IEEE, 2018.
29. Rasheed, Imran, and **Haider Banka**. "Query Expansion in Information Retrieval for Urdu Language." In 2018 Fourth International Conference on Information Retrieval and Knowledge Management (CAMP), pp. 1-6. IEEE, 2018.
30. Singh, Jayraj, **Haider Banka**, and A. K. Verma. "Analysis of slope stability and detection of critical failure surface using gravitational search algorithm." In 2018 4th International Conference on Recent Advances in Information Technology (RAIT), pp. 1-6. IEEE, 2018.

31. Singh, Jayraj, A. K. Verma, and **Haider Banka**. "A Comparative Study for Locating Critical Failure Surface in Slope Stability Analysis via Meta-Heuristic Approach." In Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering, pp. 1-18. IGI Global, 2018. [*Book chapter*]
32. Raj, Ankesh, Jitesh Pradhan, Arup Kumar Pal, and **Haider Banka**. "Multi-scale image fusion scheme based on non-sub sampled contourlet transform and four neighborhood Shannon entropy scheme." In 2018 4th International Conference on Recent Advances in Information Technology (RAIT), pp. 1-6. IEEE, 2018.
33. Pradhan, Jitesh, Sumit Kumar, Arup Kumar Pal, and **Haider Banka**. "Texture and Color Visual Features Based CBIR Using 2D DT-CWT and Histograms." In International Conference on Mathematics and Computing, pp. 84-96. Springer, Singapore, 2018.
34. Raj, Ankesh, Jitesh Pradhan, Arup Kumar Pal, and **Haider Banka**. "Multi-scale image fusion scheme based on non-sub sampled contourlet transform and four neighborhood Shannon entropy scheme." In 2018 4th International Conference on Recent Advances in Information Technology (RAIT), pp. 1-6. IEEE, 2018.
35. Pradhan, Jitesh, Sumit Kumar, Arup Kumar Pal, and **Haider Banka**. "Texture and Color Visual Features Based CBIR Using 2D DT-CWT and Histograms." In International Conference on Mathematics and Computing, pp. 84-96. Springer, Singapore, 2018.
36. Shit, Priyanka, and **Haider Banka**. "A Feature-Reduced Discretized Random Forest Model for Oral Bioavailability Data Classification." In Computational Intelligence: Theories, Applications and Future Directions-Volume II, pp. 27-37. Springer, Singapore, 2019.