Prof. Malay Ananda Dutta

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Date of Birth August 31, 1951

Educational Qualifications:

- **M.Sc. (Physics) Delhi University, India, 1972.**
- **Ph.D (Mathematics) IIT Kanpur, India, 1979.**
- **M. S. (Computer Sc.) University of Houston, USA, 1982.**

Teaching Experience:

- Currently working as **Professor in Department of Computer Sc & Engg., Indian Institute of Informtion Technology, Guwahati, since 2016**
- Professor Department of Computer Science and Engineering, Tezpur University from 1997 to 2016.
- Professor in Department of Computer Science, Gauhati University from 1990 to 1997**.**
- Reader in Department of Computer Science, Gauhati University from 1985 to 1990.
- Lecturer (Mathematics), Cotton College, Guwahati, 1984.
- Teaching Assistant in University of Houston, USA (Physics 1980), (Computer Science 1981)
- Lecturer (Physics) in B.Boruah College Guwahati from 1978 to 1980.
- Teaching Assistant in I.I.T Kanpur (Mathematics), 1976-1978.

Industrial Experience:

- Senior Programmer, Scientific Applications Division, Sperry Univac, Minneapolis USA,1982-1983.
- Consultant (During 1984-1990) to various organizations Eg. Frontier Information Technology Pvt.Ltd., Hyderabad, Assam Electronics Development Corporation Etc.

Visiting Positions/Fellowship/Awards:

- Assam State Govt. Scholarship for Overseas Studies 1980-1982
- Stella Ehrardt Award, University of Houston for outstanding performance In Graduate studies, 1981.
- Visiting Fellow School of Mathematics, Computer & Information Sciences University of Hyderabad Summer 1986
- Visiting Fellow, Computer Science Group, Tata Institute of Fundamental Research, Mumbai, Summer 1987,1988 & 1989
- Visiting Fellow, Supercomputer Education and Research Centre, Indian Institute of Science, Bangalore, Summer 1992
- Fulbright Foreign Scholarship Board Selected Indo-American Fellowship Program Award for Visit to University of Houston USA for 3 months In 1983

Educational Administration:

- Head of the Department of Computer Science(Founder Head) ,Gauhati University,1985-1997
- Head of the Department of Information Technology,(1st Regular Head) Tezpur,1997-2000
- Dean Academic Affairs, Tezpur University,2001-2004.

Research Publications:

Journals:

1. M.Dutta and U.B. Tewari, "On multipliers of Segal algebras", Proceedings of the American Mathematical Society, 72 (1), 1978, 121-124.
2. U.B. Tewari and M.Dutta, "Continuously Translating vector valued measures", Transactions of the American Mathematical Society, 257 (2), 1980, 507-519.
3. U.B. Tewari, M.Dutta and D.P.Vaidya, "Multipliers of group algebras of vector valued functions", Proceedings of the American Mathematical Society, 81 (2), 1981, 223-229.
4. U.B. Tewari, S.Madan and M.Dutta "Tensor Products of Commutative Banach Algebras", International J. Math. Sci., 5 (1982), no 3, 503-512.
5. B.P.Chetia, M.Dutta and A.Kalita, "Use of group-theoretic methods in the study of partition functions", Nat. Acad. Sci. Letters, 13 (1), 1990, 27-29.
6. M.Dutta and A.Kakoti, "Using the idea of Grobner Basis for generating computer proofs of Trigonometric formulas", Journal of the Assam Science Society, December 1993, 294-299.
7. M.Dutta and A.Kakoti, "Analysis with computable real numbers", Golden Jubilee Volume of Gauhati University Science Journal 1998.
8. 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 generic algorithm for calculating resonant frequency of an RMA on thick substrate", Microwave and Optical technology letters USA, May 2004, Vol 41 No.4, p 313-315.
9. D.K.Neog, S.S. Pattnaik and M.Dutta, "Inverted L-shaped and parasitically coupled inverted L-shaped microstrip patch antennas for wide bandwidth", Microwave and Optical Technology letters , vol 42 , no. 3, pp 190-192 , Aug 2004.
10. 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, P 140-144, Jan 2005.
11. B.Khuntia, S.S.Pattnaik, 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 USA Jan 2005, 44(2),144-146.
12. 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 Antenna and Propagation Magazine, 47 no 3, June 2005, 60-65.
13. M.Dutta, A.Kakoti and A.K.Pujari, "QROCK : A Quick Version Of The ROCK Algorithm For Clustering of categorical Data", Pattern Recognition letters, Vol 26, Issue 15, Nov 2005, p 2364-2373.
14. D.K.Neog, S.S.Pattnaik, D.C.Panda, S.Devi, M.Dutta and O.P. Bajpai, "New expression for the resonance frequency of an E-shaped Microstrip Patch Antenna", Microwave Optical Technology Letters, USA, August 2006, Vol 48, No 08, 1561-1563.

15. S.Devi, S.S. Pattnaik, M.Dutta, GVRS Sastry, PK Patra and Ch Vidya Sagar, "Image denoising using Bacterial Foraging Optimization Technique", International Journal on Information Processing, Vol 2, No 1, 57-61, 2008.
16. M.Dutta, "Two conjectures such that the proof of any one of them will lead to the proof that P=NP", arxiv.org:0812.3214, Dec 2008.
17. S.S.Satpathy, M.Dutta and S.K.Ray, "Higher tRNA Diversity in Thermophilic Bacteria: A Possible Adaptation to Growth at High Temperature", MicrobiolRes, 165(8):609-616. 2010.
18. S.S.Satpathy, M.Dutta and S.K.Ray, "Variable correlation of genome GC% with transfer RNA number as well as with transfer RNA diversity among bacterialgroups: α-Proteobacteria and Tenericutes exhibit strong positive correlation", Microbiol Res. 2010 Mar 31;165(3):232-42.
19. S.S.Satpathy, M.Dutta, A.K.Buragohain and S.K.Ray, "Transfer RNA gene numbers may not be completely responsible for the codon usage bias in asparagine, isoleucine, phenylalanine and tyrosine in the high expression genes in bacteria", J. Mol. Evol. 2012; 75(1-2):34–42.
20. S.S.Satpathy, B.R.Powdel, M.Dutta, A.K.Buragohain and S.K.Ray, "Selection on GGU and CGU codons in the high expression genes in bacteria", J. Mol. Evol 2014;78(1):13-23.
21. S.S.Satpathy, B.R.Powdel, M.Dutta, A.K.Buragohain and S.K.Ray, "Constraint on di-nucleotides by codon usage bias in bacterial genomes", Gene, 2014; 536(1):18–28, Elseiver.
22. R.Goswami, D.K.Bhattacharyya, M.Dutta and J.Kalita, "Approaches and Issues in View Selection for Materializing in Data Warehouse", International Journal of Business Information Systems, Vol 21, No. 1, 17-47, Inderscience, 2016.
23. R.Goswami, D.K.Bhattacharyya, and M.Dutta, "Materialized View Selection Using Evolutionary Algorithm for speeding up Big Data Querry Processing, Journal of Intelligent Information Systems, Springer 2015 (under review).

Conferences:

1. M.Dutta and A.Kakoti, "An improvement in the iterative step in Karmarkar's algorithm for linear programming", Computer Systems and Applications, Recent Trends, E. Balaguruswamy ed., Tata-Mcgraw Hill, 1990, 311-320.
2. M.Dutta and A.Kakoti, "Basis for a vector space generated by Hamiltonian cycles in a graph", Proceedings of the sixth National Seminar on Theoretical Computer Science, Banasthali Vidyapeeth, Rajasthan, August 1996.
3. A.Kakoti and M.Dutta, "Completeness of computable real numbers", North East Regional Conference on Mathematics, Assam Academy of Mathematics, April 1997.
4. M.Dutta and A.Kakoti, "An Incremental Clustering Algorithm For Clustering Large Sets Of Categorical Data", Proceedings Of CIT 2001 International Conference of Information Technology, Berhampur, Orissa , 20-23 December 2001.
5. M.Mazumdar, A.Kakoti and M.Dutta, "An Algorithm for clustering of categorical data using the concept of neighbours", Proceedings of The 1st National Workshop on Soft Data Mining And Intelligent Systems(SDIS 2001) , September 2001, Tezpur University.
6. A.Kakoti and M.Dutta, "A Fast Summary-based Algorithm For Clustering Large Categorical Databases", ICWES 12, July 2002, Ottawa, Canada.
7. M.Dutta, A.Kakoti and A.Bhattacharjee, "A new method for computing pair wise cluster projections in CACTUS algorithm", Proc of CIT 2003 International Conference on Information Technology Orissa,India.
8. P.J.Dutta, D.K.Bhattacharyya, M.Dutta and J.Kalita, "Spatial color indexing using clustering technique", The 8th world multi conference on Systemics, Cybernetics and Informatics (SCI' 2004) Vol VI: Image, Acoustics, Signal processing and applications,Orlando, Florida, p-216-221, July 2004.
9. D.K.Neog, S.S.Pattnaik, M.Dutta, D.C.Panda, S.Devi and B.Khuntia, "A Novel patch antenna for wide band generation", Proceedings of International Conference on Antenna Technologies , ICAT Ahmedabad, pp 345-348, Feb 2005.

10. 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, ICAT Ahmedabad Feb 2005.
11. P.J.Dutta, D.K.Bhattacharyya, J.Kalita and M.Dutta, "Clustering Approach to Content Based Image Retrieval", Geometric Modeling and Imaging – New Trends (GMAI06), 2006, 183-188.
12. M.Dutta and A.Kakoti, "An algorithm for clustering large categorical databases using a fuzzy set based approach", Networks, Data Mining and Artificial Intelligence : Trends and Future Directions, D.Bhattacharyya and S.Hazarika (eds), pp 120-129, Narosa Publishing House, 2007.
13. S.Devi and M.Dutta, "Detection of cold lesions in SPECT images of cardiac", National Conference on Trends in Advanced Computing, 22-23 March 2007, Tezpur University, Assam.
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15. M.Kalita, D.K.Bhattacharyya and M.Dutta, "Privacy Preserving Clustering : A Hybrid approach", Advanced Computing and Communications Dec 2008, 123-130, ADCOM, IEEE.
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17. M.Dutta and D.I.Mazumder, "A polynomial-time reduction of the shortest s-directed spanning tree problem to linear programming", NWDAA-2010, Tezpur, Assam, 22-23 January 2010.
18. S.S.Satpathy, M.Dutta and S.K.Ray, "Predicting gene expression from unevenness in codon usage", International Conference & Exhibition on Proteomics & Bioinformatics, Hyderabad 06-08 June 2011.
19. R.Goswami, M.Dutta and D.K.Bhattacharyya, "Approaches and Issues in View Selection for Materializing in Data Warehouse", Machine Intelligence – Recent Advances, Narosa, New Delhi, 76-82, 2011.
20. R.Goswami, D.K.Bhattacharyya and M.Dutta, "Selection of Views for Materializing in Data Warehouse Using MOSA and AMOSA", Proceedings of the Second International Conference on Computer Science, Engineering and Applications, ICCSEA – 2012, May 25-27, 2012, Delhi, India, by Springer.
21. J.Jakhar, P.Dey, M.Dutta and D.K.Bhattacharyya, "CellTCS : A Secure Threshold Cryptography Scheme based on Non-linear Hybrid Cellular Automata", International Conference on Computer Communications and Security, NIT Rourkela, 2012.
22. S.S.Satpathy, B.R.Powdel, M.Dutta, A.K.Buragohain and S.K.Ray, "Constraint on genome signature by coding sequences in bacterial genomes". International Conference on Biomolecular Forms and Functions, IISc, Bangalore 08-13 January 2013.
23. R.Goswami, D.K.Bhattacharyya and M.Dutta, "Multiobjective Differential Evolution Algorithm Using Binary Encoded Data in Selecting Views for Materializing in Data Warehouse", In: Bijaya Ketan Panigrahi, Ponnuthurai Nagaratnam Suganthan, Swagatam Das, and Shubhransu Sekhar Dash (Eds.) Swarm, Evolutionary, and Memetic Computing 4th International Conference, SEMCCO 2013, Part II, LNCS 8298, pp. 95–106, Springer International Publishing Switzerland (2013) .
24. RC Baishya, R.Sarma, D.K.Bhattacharyya and M.Dutta, "A similarity measure for clustering Gene Expression Data", Applied Algorithms, Jan 2014, 245-256.
25. Mala Dutta, M.Dutta and A.Mahanta, "Mining closed intervals in an interval database", Electrical Computing and Communication Technologies, ICRCCT, 2015, IEEE.

Other Publications:

- M.Dutta, G.H.F. Gardner and L.D.Pyle, "A 3D Migration program for the Cyber 203/5", Semi-annual Progress Review, Seismic Acoustic Laboratory, University of Houston, 1982.
- M.Dutta, "Theory of Computation and NP-completeness", Proceedings of the National Seminar on Mathematics, University of Calcutta, December 1991, 65-71.
- V.V.Sanjaynath, M.Dutta, N.Balakrishnan and G.R.Nagabhusana, "Comparison of three conjugate gradient algorithms for wire-grid structures", Proceedings of the Seminar on Numerical techniques in Antenna Design, Indian Institute of Science, Bangalore December 1992.