

# Curriculum Vitae



- Name: **Banshidhar Majhi, Ph.D. (CSE),**  
FIETE, LMCSI, AMIE  
Professor, Department of Computer Sc. & Engineering  
National Institute of Technology, Rourkela
  
- Date of Birth: **14th April, Nineteen Sixty Three**
  
- **Mission**
  - *To become a perfect academician in terms of teaching & research*
  - *To make my place of work a center of excellence in R & D as per with international standard*
  - *To become the role model in front of others*
  - *To channelise the students, who are the best resources of the Institution/Dept. towards R & D work*
  - *To bring funds from funding agencies to the department*
  - *To strengthen the Continuing Education in the department*
  - *To motivate the human resources of the department for best productivity*
  - *To introduce the state of the art courses/technologies in the department*
  
- **Teaching Practice**
  - *Consider Research work as an integral component of teaching and give equal importance to both teaching and research in day today life*
  - *Take up every lecture of my subjects as a fresh one and try to collect more materials on the topic to up-to-date my knowledge so that I can deliver as much possible to the students*
  - *Explanation of each module in a topic followed by practical applications in industry standard*
  - *Believe in co-operative learning and involve students actively during lectures*
  - *Believe in upgrading the syllabi from time to time to include the most recent topics/techniques in addition to fundamentals*
  - *Believe in teaching aids like power point presentation and OHP slides for effective deliberations, in addition to blackboard use. I consider teaching aids are aids to effective teaching but not replacement to blackboard teaching.*



□ **Conference/Workshop/Short-term Course Conducted**

- Conducted *National Conference* on “**Soft Computing Techniques for Engineering Applications**”, 24-26<sup>th</sup> March, 2006.
- Conducted (*as co-coordinator*) an *ISTE short-term* course on “**Advanced AI and its Applications**”, December 15-22, 1998.
- Conducted *two workshops* on “**Management Information System: A Basic Necessity**”, for the staff of the Institution in 1998 under UK-India Project..
- Under *Continuing Engineering Education Program [CEEP]* conducted 15 short term courses

□ **Medals/Awards**

- J.C. Bose Gold Medal for Best Engineering paper, IETE, Journal of Research,2004
- Gold Medal from Orissa Engineering Congress, 2001
- National Scholarship during 1980-1984
- Merit scholarship in MCA during 1987-88

□ **Educational Qualifications:**

• **Ph.D.(Computer Sc. & Engg):**

Institute: NIT, Rourkela, [Sambalpur University]  
Thesis title: "**Soft Computing Techniques for Image Restoration**",  
Guided by: Dr. G.Panda, Professor, E & IE , NIT,Rourkela  
Dr. P.K.Dash, Professor, Electrical Engg, NIT,Rourkela

**Contributions:**

1. Developed Filters for removal of Impulse noise from images

- using Second Order Differential based detector
- using Fuzzy based detector
- using Neural based detector
- using Neuro Wavelet based detector
- using Fuzzy Wavelet based detector

2. Developed a RBFNN based filter to remove Gaussian noise from images

• **Master in Engineering(Computer Science & Engineering)**

Institute: NIT, Rourkela [Sambalpur University]  
Thesis title: "**Functional Partitioning of Sequential Programs**"  
Guided by: Dr. S.K.Jena, Professor, Dept. of CSEA, NIT,Rourkela.

**Contributions:**

Developed parallel modules from sequential programs and simulated using threads.

## □ Research Publications

### Journals

1. Banshidhar Majhi, Pankaj K. Sa, "FLANN based Adaptive Threshold Selection for Detection of Impulsive Noise in Images", International Journal of Electronics and Communications(AEU),(2006),doi:10.1016.aeue.2006.08.007.
2. Banshidhar Majhi, Y.Santosh Reddy, and A.K.Turuk, "A New Key Exchange Protocol", International Journal of Computers, Communications and Control, Romania, Vol. 1, pp.301-307, 2006.
3. Banshidhar Majhi, Y.Santosh Reddy, and D.Prasanna Babu, "Novel features for offline Signature Verification", International Journal of Computers, Communications and Control, Romania, Vol. 1, No.1, pp.17-24, 2006.
4. B.Majhi, M.Fathi, "FLANN Detector based Filtering of Images Corrupted by Impulse Noise", International Journal of Computer Science, A Quarterly Publication of Science Publications, USA, Vol. 1 No.3, pp.332-336, 2005, ISSN 1549-3636,2005,.
5. B.Majhi, Hasan Shalabi, M.Fathi, "FLANN based Forecasting of S & P 500 Index", International Journal of Information Technology, Asia Network for Scientific Information (ANSI) Publishing, Vol. 4, No. 3, pp. 289-292, ISSN 1812-5638,2005.
6. B.Majhi, Hasan Shalabi, M.Fathi,A.M.Ali, "Detection of Parallelism in Sequential Programs based on Functional Partitioning", International Journal of Information Technology, Asia Network for Scientific Information (ANSI) Publishing, Vol. 4,No.2, pp. 118-124, ISSN 1812-5638,2005.
7. B.Majhi, Hasan Shalabi, "An Improved Scheme for Digital Watermarking using Functional Artificial Neural Network", International Journal of Computer Science, A Quarterly Publication of Science Publications, USA, Vol: 1 No.2, pp.169-174, ISSN 1549-3636,2005.
8. G.Panda, B.Majhi, S. K. Meher, and P. K. Dash, "A Novel Filtering Scheme for Impulse Noise Cancellation", IETE Journal of Research, Vol. 48, Nos. 3 & 4 pp. 163-170, May-August, 2002. (Special issue on visual media processing). Selected for IETE J.C. Bose Memorial Award, in the year 2004.
9. G.Panda,S.K.Meher,B.Majhi, "Denoising of Corrupted Data using Discrete Wavelet Transform", Journal of Computer Society of India, Vol.30, No. 3 , pp. 11-18, September, 2000.
10. G.Panda, B.Majhi, P.K.Dash, "Development of Efficient Filtering Techniques for Image Data Corrupted by Impulse Noise", Journal of Computer Society of India, Vol.30, No. 1, pp. 25-33, March, 2000.
11. G.Panda, B.Majhi, P.K.Dash, "Electronic Money: An Essence of E-Commerce", IETE Technical Review, Vol. 17 No. 4, pp. 203-207, July-August, 2000.
12. B.D. Sahoo, B.Majhi, P.Patel, "Knowledge Based Integrated Information System Design using Object Oriented Methodology", CSI Communications, April'98 pp 15-20.
13. B.Majhi, P.S.Roop, C.V. Sastry, "Representation of Incomplete Information in Relational Databases, CSI Communications, July'92, pp. 28-31.

### International/National Conferences

1. Pankaj Kumar Sa, Banshidhar Majhi and Ganapati Panda, "Improved Adaptive Impulsive Noise Suppression", Accepted for publication in IEEE International Conference on Fuzzy Systems to be held at Imperial College, London, UK during 23-26 July, 2007.

2. B.Majhi, P.K.Sa, G.K.Panda, "ANN based Adaptive Thresholding for Impulse Detection", IASTED Int. Conference on Signal Processing, Pattern Recognition, and Applications, SPPRA-2006, February, 15–17, 2006, Innsbruck, Austria
3. B.Majhi, P.K.Sa, G.Panda, "Decision Directed Median Filter", ", Proceedings of Int. Conf. on Information Technology (CIT,2005), Bhubaneswar, pp. 233-235, Dec. 20-23 ,2005
4. B.Majhi, P.K.Sa, G.Panda "Second Order Differential Impulse Detector", International Conference on Intelligent Systems (ICIS-2005), University of Technology, Petronas, Malaysia, December 1-3, 2005.
5. S.Meher, G.Panda, *B.Majhi*, M.R.Meher, "Fuzzy Weighted Rank Ordered Mean Filters", Proceedings on National Conference on Communication (NCC), January 28-31, 2005, pp.331-335, IIT,Kharagpur
6. S.Meher, G.Panda, *B.Majhi*, M.R.Meher, "Weighted Order Statistics Filters", Proceedings on National Conference on Recent Advances in Power, Signal Processing and Control (APSC) – November 16-17,2004, pp.167-173,NIT, Rourkela.
7. B.Majhi, R.C.Patel, G.Panda, P.K.Sa, "Digital Watermarking of Images using Functional Link Artificial Neural Network", Accepted for publication in International Conference on Informatics (ICI-2004) on September, 01-04, 2004, Çesme, Izmir, Turkey.
8. G.Panda, D.P.Das,B.Majhi, S. K. Meher,S.Meher, "Intelligent Text recovery using an efficiently trained RBF Neural Networks", Proceedings of Int. Conf. on Intelligent Signal Processing and robotics, 2004, (ISPR-2004), IIIT, Allahabad, 21-22, March,2004.
9. B. Majhi, Anita Nayak, "Impulse Noise removal using double differentiation filter", Orissa Engineering Congress Souvenir, Vol. 48, pp., EECS-19-24, 2003.
10. G.Panda, D.P.Das, B.Majhi, S.K.Meher "Binary Image Restoration using an Efficiently Trained Radial Basis Function Neural Network", Accepted for publication in IASTED International Conference on Artificial and Computational Intelligence, 2002 (ACI, 2002) Tokyo, Japan, to be held during 25-27,2002.
11. B.D.Sahoo, M.B.Prasad, B.Majhi, "Agent Based data Mining", Proceedings of Orissa Engineering Congress Souvenir, Vol. 47, pp. EECS-1-EECS-8, January, 2002.
12. G.Panda, B.Majhi, S.K.Meher, S.K.Panigrahi, "Parallel Fuzzy Detector based Image Restoration", Proceedings of Orissa Engineering Congress Souvenir, Vol. 47, pp. EECS-23-EECS-29, January, 2002.
13. G.Panda, B.Majhi, P.K. Dash, "Novel Filtering Schemes for Image Restoration: A Comparative Analysis", Proceedings XXXVI Annual Convention, CSI, 2001, Kolkata, pp C-56-C-61.
14. G.Panda, B.Majhi, S. K. Meher, P. K. Dash, "Image restoration using a Neural Detector and Wavelet Based Pre-filter", Accepted for publication in 9<sup>th</sup> International Conference on ADCOM' 2001, Bhubaneswar, India.
15. G.Panda, B.Majhi, S. K. Meher, P. K. Dash, "A Novel Filtering Scheme for Image Corrupted by Impulse Noise", Accepted for publication in IASTED International Conference on Signal and Image Processing 2001 (SIP 2001), Calgary, USA, Nov 19-23,2001.
16. G.Panda, B.Majhi, P.K.Dash, "Selective Median Filtering using Fuzzy detector for Impulse noise removal", Proceedings, National Conference on Communications, IIT, Kanpur, pp. 105-109, Jan 27-28, 2001.
17. S.K.Nayak, B.D.Sahoo, B.Majhi, "Prediction of Currency Rate using Artificial Neural Networks", Proceedings of Institution of Engineers, Bhubaneswar, pp. 230-237, January 2001.

18. G.Panda, B.Majhi, P.K.Dash, "Filtering Schemes for Removal of Impulse Noise using Fuzzy Detector", Proceedings, Int. Conf. on Information Technology, Bhubaneswar, India, pp. 233-237, December 21-23, 2000.
19. G.Panda, B.Majhi, P.K.Dash, "A Novel Impulse Filtering Scheme for Corrupted Image using ANN Detector", Proceedings of Int. Conf. on Communications, Computers, & Devices (ICCCD-2000), IIT, Kharagpur, pp. 603-606, December, 14-16,2000.
20. G.Panda, B.Majhi, A.Goel, V.Agrawal, " A New Adaptive Restoration Algorithm for Images Corrupted by Impulse Noise", Proceedings, 8<sup>th</sup> Int. Conf. On Advanced Computing & Communications (ADCOM), 2000 Cochin, India, pp. 144-151, December 14-16,2000.
21. G.Panda, B.Majhi, P.K.Dash, "Fuzzy Logic Based Impulse Noise Detection and Restoration of Image", Proceedings of the 7<sup>th</sup> International Conference on ADCOM'99, Roorkee, India pp. 8-12, Dec 20-22, 1999.
22. Saswat Anand, B.Majhi, "Forecasting of S&P500 Index of New York stock exchange: A comparison between Functional Link ANN and MLP", Proceedings of the 7<sup>th</sup> International Conference on ADCOM'99, Roorkee, India pp. 206-210, Dec 20-22, 1999.
23. Shubhakanta, B.Majhi, S.K. Jena "Envelope Curve Determination using Adaptive Genetic Algorithm", Proceedings of National Conference of Computer Society of India, New Delhi, 1998.
24. B.D.Sahoo, B.Majhi, S.K.Jena, "Intelligent Information Retrieval in Internet using Agent Technology", Proceedings of Northern Regional Conference on Computing'99, Computer Society of India, pp. 48-54, February 27-28,1999.
25. B.Majhi, B.D.Sahoo, S.K.Panigrahi, "Improved algorithm for Matrix Multiplication", Proceedings of Second national Conference on Advanced Computing, Coimbatore, February 2002
26. G.Panda, B.Majhi, B.D.Sahoo, "Society and Digital Technology", Proceedings of 21<sup>st</sup> Orissa Engineering Congress, Bhubaneswar, pp. 202-206, January 2001.
27. G.Panda, B.Majhi, P.K.Dash, "E-Commerce: Business Opportunity in the Internet", Proceedings of 20<sup>th</sup> Orissa Engineering Congress, Bhubaneswar, pp. 228-233, January,2000.
28. G.Panda, B.Majhi, P.K.Dash, "Spatial Filtering of Impulse Noise using Improved Fuzzy Detector", Proceedings of the National Conference on Soft Computing & IT, GGU, Bilaspur, India, pp. 101-105, Oct. 11-12,2000.
29. G.Panda, M.Behera, B.Majhi, "River Flow Forecasting using Artificial Neural Network", Proceedings of the National Conference on Soft Computing & IT, GGU, Bilaspur, India, pp. 31-34, Oct. 11-12,2000.
30. S.K.Agrawal, B.Majhi, S.K.Jena, "New Parallel Algorithm to Solve General Simultaneous Equations", Proceedings National Seminar on Theoretical Computer Science, Bhubaneswar, 1998.
31. B.Majhi, S.K.Jena, "Parallelisation of Sequential Programs", Proceedings of 23rd Annual Convention Computer Society of India, Rourkela, pp 9-20, Nov.,1998

□ **Selected Thesis titles supervised**

<i>Degree</i>	<i>Name of Student</i>	<i>Title of Thesis</i>	<i>Year</i>
<b>Ph. D.</b>	S. Meher,	Development of Some Novel Nonlinear and Adaptive Digital Image Filters for Efficient Noise Suppression	2005
	Pankaj Sa	Image Restoration and Deblurring	ongoing
<b>M.Tech (Res)</b>	Pankaj Sa	Development of improved impulse noise detection schemes	2006
<b>M.Tech.</b>	S.K.Nayak	Prediction of Currency rate using ANN	2000
	H.K.Pati	Development of a Parallel Fuzzy detector for Impulse noise	2000
	Ms..A.Nayak	Design of a Second Order Differential Filter for image recovery	2001
	S.K.Barik	Design of Max-Min Filter for Impulse Noise Removal from images	2001
	Saroj Panda	Design and implementation of a CORDIC Filter Structure using VHDL	2002
	S.K.Satapathy	Design of a Fuzzy Logic based detector for impulse noise	2003
	J.S.Patra	Program Partitioning for Object Oriented software	2004
	M.Sahoo	ANT Colony based Adaptive Routing Protocol for Mobile Ad-Hoc Networks	2004
	Ramesh Patel	Digital Watermarking using Functional Link Neural Network	2004
	Ms. N.Adhikari	Neural Approach to Software Effort Estimation	2004
N.V.Krishna	Comparative Analysis of Watermarking Schemes	2005	
P.M.Santosh	Improved Signature Recognition	2006	
P.Baboo	Neuro-Wavelet based Digital Watermarking	2006	

□ **Qualifications/Degrees**

<i>Degree</i>	<i>Discipline</i>	<i>University /Board</i>	<i>Year</i>	<i>Division / Grade / % of Marks</i>	<i>Remarks if any (Rank, Hons etc.)</i>
<b>Doctorate (Ph.D.) CSE</b>	Computer Science & Engineering	Sambalpur University	2003		Soft Computing Techniques for Image Restoration
<b>Masters M.E.(CSE)</b>	M.E. (CSE)	do	1998	First Division 79.45	Secured the First rank in the Class
	Computer Science & Applications	do	1988	First Division 68.72	Awarded Merit Scholarship
<b>M.C.A.</b>					
<b>Bachelors B.Sc.(Hons)</b>	Physics(Hons) Math. Statistics	do	1984	1 <sup>st</sup> Class Dist. 68.66	
<b>I. Sc.</b>	Phy,Chem,Math, Stat.	do	1982	First Division 80.44	
<b>High School (Class- XI)</b>	Math.(Hons) , Gen Sc., Math.	BSE, Orissa	1980	First Division 69.50	Awarded National Scholarship

□ **Employment**

Employer	Post	Pay Scale	Period of Employment	
			From	To
NIT, Rourkela	1. Professor	16,400/-	01-07-2006	Continuing
	2. Assistant Professor	12,000/-	01-09-1998	30-06-2006
	3. Lecturer	2,200/- (Old Scale)	03-09-1991	31-08-1998
IGIT, Sarang, Talcher	Lecturer	2,200/- (Old Scale)	18-06-1990	18-02-1991
Hindustan Motors Ltd, Kolkata	Programmer	2125/- PM (Consolidated)	02-02-1989	17-06-1990
Maegabyte Computer Academy, Sambalpur	Lecturer cum Programmer	1500/- PM (Consolidated)	01-06-1988	27-01-1989

□ **Selected courses taught (M.Tech./B.Tech./MCA)**

Computer Programming (C/ C++/JAVA)	Advanced Computer Architecture
Operating Systems	Advanced Operating Systems
Algorithms Design	Artificial Intelligence
Data Communication & Networking	Cryptography and Network Security
Systems Analysis and Design	Digital Signal Processing
Database Management System	Information Theory & Coding
Microprocessors	Simulation Modeling
Principles of Programming Languages	Software Engineering
Data Structures	Image Processing
Operations Research	Soft Computing

□ **Participation in Short term courses**

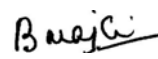
<i>Title of the course</i>	<i>No of weeks</i>	<i>Institution</i>
Information Security	4 weeks (15th May- 9th June,06)	IMSC, Chennai
Advanced Computer Architecture	2 weeks (6th July – 19th July, 03)	IIT, Kharagpur
VLSI and Related Software	4 weeks (17th June – 12th July,02)	IIT, Chennai
Image Processing	2 weeks (22nd May- 03rd June,2000)	IIT, Delhi
Computer Networks	1 week (24th Nov-28th Nov'97)	IIT, Kanpur
Operating System Principles	6 weeks (21st Nov-31st Dec'94)	IIT, Bombay
Compiler Construction	6 weeks (21st June-31st July'93)	IIT, Bombay
Business Information System	6 weeks (22nd June-31st July'92)	IIT, Bombay

□ **Additional Responsibilities handled in the Institute from time to time**

- Working as a Warden in Hall of Residence since July,2007
- Worked as **Asst. Controller of Examination** for 5 years.
- As **Coordinator** CEEP (Continuing Engineering Education Programme) in the department and generated resources of Rs. 10 Lakhs
- Served as the **Chief** of Management Information System (MIS) Development in the Institute.
- Developed a **Library Package** for cataloguing to port data to LIBSYS.
- Developed **Scroll Cash Package** for daily transaction in the Institute Cash Section.
- Designed and prepared the **identity card** for student and staff in 2004.
- Serving as **member** for following Committees
 

■ Systems and Networking	■ NIT Automation
■ Telephone Installation	■ Departmental DSC and MSC
■ Library automation	■ DSC for Electrical Engg. Dept.
■ Convocation	■ TEQIP departmental coordinator

Place : NIT, Rourkela  
Dated: 04.04.2007

  
Signature