



1. DESIGNATION Reader, Electrical Engineering Department, Jadavpur University

2. QUALIFICATION PhD (Engg.), M.E.E.

3. (i) ADDRESS (residential) 14D/2D, Naktala Road
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4. DATE OF BIRTH December 01, 1968

5. ACADEMIC CAREER

Examination/ Degree	University	Year of Passing	Division/ Class	Rank	Percentage of Marks
Bachelor of Electrical Engg.	Jadavpur University, Kolkata, India	1991	1 st Class	5th	85.1
Master of Electrical Engg.	Jadavpur University, Kolkata, India	1994	1 st Class	3rd	85.8
Ph.D. (Engg.)	Jadavpur University, Kolkata, India	2002			

6. TEACHING EXPERIENCE Working in Jadavpur University, Kolkata, India,
since March, 1997

7. INDUSTRIAL EXPERIENCE Almost four years

8. RESEARCH INTERESTS

- i)* Intelligent Instrumentation and Control
- ii)* Signal Processing
- iii)* Image Processing
- iv)* Robotics
- v)* Fuzzy Systems
- vi)* Metaheuristic Optimization

9. SUBJECTS TAUGHT/TEACHING

- i) B.E.E. Courses:* Process Control and Instrumentation, Electrical Instrumentation, Digital Signal Processing, Reliability Engineering, Electrical Measurements and Measuring Instruments, Digital Techniques in Instrumentation, Electrical Technology
- ii) M.E.E. Courses:* Computer Applications in Instrumentation, Electronic Devices and Techniques

10. FELLOWSHIPS / HONOURS / AWARDS / PRIZES RECEIVED

- a) Have been awarded JSPS (Japan Society for the Promotion of Science) Postdoctoral Fellowship in FY 2004-2005 in University of Electro communications, Tokyo, Japan, in the field of 'Robotics'. Research tenure - November, 2004 to November, 2005.
- b) Have been awarded the Japanese Government Scholarship – 2003 (Monbukagakusho) in the field of 'Robotics' in Saga University, Japan. Research Tenure - April, 2003 to June, 2003.
- c) Was invited as a Teacher-Researcher in University of Paris XII, France from March 2004 to May 2004.
- d) Received the best paper presentation award during the 26th National Systems Conference (NSC – 2002) in the area of "Cognitive Systems and Artificial Intelligence", held in INCOIS, Hyderabad, India in November, 2002.
- e) Received Ganesh Janani Debi Memorial Bronze Medal and Certificate in 1991 for securing maximum marks in Electrical Machines II and III (combined) during BEE curriculum.

11. PAPERS PUBLISHED / PRESENTED / ACCEPTED FOR PUBLICATION : 48

12. SELECTED LIST OF PUBLICATIONS :

a. International Journals

1. A. Chatterjee and F. Matsuno, "A neuro-fuzzy assisted extended Kalman filter-based approach for Simultaneous Localization and Mapping (SLAM) problems," Accepted for publication in *IEEE Trans. on Fuzzy Systems*.
2. A. Chatterjee, R. Chatterjee, F. Matsuno, and T. Endo, "Augmented stable fuzzy control for flexible robotic arm using LMI approach and neuro-fuzzy state space modeling," Accepted for publication in *IEEE Trans. on Industrial Electronics*.
3. M. Maitra and A. Chatterjee, "Hybrid multiresolution Slantlet transform and fuzzy *c*-means clustering approach for normal-pathological brain MR image segregation," Accepted for publication in *Medical Engineering and Physics*, Elsevier Publishers.
4. M. Maitra and A. Chatterjee, "A hybrid cooperative-comprehensive learning based PSO algorithm for image segmentation using multilevel thresholding," Accepted for publication in *Expert Systems with Applications*, Elsevier Publishers, now available online.
5. M. Maitra and A. Chatterjee, "Application of AI techniques for locating mobile terminals in mobile wireless cellular networks: A novel paging scheme," Accepted for publication in *Expert Systems with Applications*, Elsevier Publishers, now available online.
6. A. Chatterjee and P. Siarry, "A PSO-aided neuro-fuzzy classifier employing linguistic hedge concepts," *Expert Systems with Applications*, Elsevier Publishers, vol. 33, issue 4, pp. 1097-1109, Nov. 2007.
7. A. Chatterjee, R. Chatterjee, F. Matsuno, and T. Endo, "Neuro-fuzzy state modeling of flexible robotic arm employing dynamically varying cognitive and social component based PSO," *Measurement*, Elsevier Publishers, vol. 40, issue 6, pp. 628-643, July 2007.
8. A. Chatterjee, M. Maitra, A. Rakshit, and P. Siarry, "A new adaptive fuzzy controller with saturation employing influential rule search scheme (IRSS)," *International Journal of Knowledge-Based and Intelligent Engineering Systems*, IOS Press Publishers, vol. 11, no. 1, pp. 47-64, 2007.

9. M. Dutta, A. Chatterjee and A. Rakshit, "Intelligent phase correction in automatic digital ac bridges by resilient backpropagation neural network," *Measurement*, Elsevier Publishers, vol. 39, issue 10, pp. 884-891, Dec. 2006.
10. M. Maitra and A. Chatterjee, "A Slantlet transform based intelligent system for magnetic resonance brain image classification," *Biomedical Signal Processing and Control*, Elsevier Publishers, vol. 1, issue 4, pp. 299-306, Oct. 2006.
11. A. Chatterjee and P. Siarry, "Nonlinear inertia weight variation for dynamic adaptation in particle swarm optimization," *Computers and Operations Research*, Elsevier Publishers, vol. 33, issue 3, pp. 859-871, March 2006.
12. A. Chatterjee, A. Rakshit, and P. Siarry, "Generalized influential rule search scheme for fuzzy function approximation," *Soft Computing*, Springer Publishers, vol. 10, no. 8, pp. 631-642, 2006.
13. A. Chatterjee and K. Watanabe, "An optimized Takagi-Sugeno type neuro-fuzzy system for modeling robot manipulators," *Neural Computing & Applications*, Springer Publishers, vol. 15, no. 1, pp. 55-61, 2005.
14. A. Chatterjee, K. Pulasinghe, K. Watanabe, and K. Izumi, "A particle swarm optimized fuzzy-neural network for voice-controlled robot systems," *IEEE Trans. on Industrial Electronics*, vol. 52, no. 6, pp. 1478-1489, December 2005.
15. A. Chatterjee, A. Nait-Ali, and P. Siarry, "An input-delay neural-network based approach for piecewise ECG signal compression," *IEEE Trans. on Biomedical Engineering*, vol. 52, no. 5, pp. 945-947, May 2005.
16. A. Chatterjee and K. Watanabe, "An adaptive fuzzy strategy for motion control of robot manipulators," *Soft Computing*, Springer Publishers, vol. 9, no. 3, pp. 185-193, March 2005.
17. A. Chatterjee and S. Munshi, "Application of ANN to thermistor based temperature measurement systems," *International Journal of Knowledge-Based and Intelligent Engineering Systems*, IOS Publishers, vol. 9, no. 3, pp. 231-237, 2005.
18. A. Chatterjee and A. Rakshit, "Influential rule search scheme (IRSS) - a new fuzzy pattern classifier," *IEEE Trans. on Knowledge and Data Engineering*, vol. 16, no. 8, pp. 881-893, August 2004.

19. S. Bhattacharya, A. Chatterjee, and S. Munshi, "A new self-tuned PID-type fuzzy controller as a combination of two-term controllers," *ISA Transactions*, vol. 43, no. 3, pp. 413-426, July 2004.
20. A. Chatterjee, A. Rakshit, and T. K. Ghoshal, "An add-on type fuzzy controller for control system retrofit," *International Journal of Knowledge-Based and Intelligent Engineering Systems*, vol. 8, no. 1, pp. 27-35, April 2004.
21. P. Purkait, A. Chatterjee, S. Chakravorti, and K. Bhattacharya, "A translationally adaptive fuzzy classifier for transformer impulse fault classification," *IEE Proceedings - Generation, Transmission and Distribution*, vol. 150, no. 1, pp. 33-40, Jan. 2003.
22. S. Bhattacharya, A. Chatterjee, and S. Munshi, "An improved PID-type fuzzy controller employing individual fuzzy P, fuzzy I and fuzzy D controllers," *Transactions of The Institute of Measurement and Control*, Arnold Publishers, vol. 25, no. 4, pp. 352-372, 2003.
23. A. Chatterjee, A. Rakshit, and T. K. Ghoshal, "Fuzzy dynamic adaptation in PID control," *International Journal of Knowledge-Based and Intelligent Engineering Systems*, IOS Press Publishers, vol. 7, no. 4, pp. 206-213, October 2003.
24. T. Roy, M. Dutta, and A. Chatterjee, "A supervised neural network based approach to linearize cryogenic temperature sensors," *International Journal of Knowledge-Based and Intelligent Engineering Systems*, IOS Press Publishers, vol. 7, no.2, pp. 90-94, April 2003.
25. A. Chatterjee, A. Rakshit, and P. K. Mukherjee, "A self organizing fuzzy inference system for electrical field optimization of HV electrode systems," *IEEE Trans. on Dielectrics and Electrical Insulation*, vol. 8, no. 6, pp. 995-1002, December 2001.

b. International Conferences

1. A. Chatterjee, M. Dutta, and A. Rakshit, "An intelligent method of impedance measurement employing PSO-aided neuro fuzzy system with LMS algorithm," accepted for presentation in IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2007), London, UK, 23-26 July 2007.
2. A. Chatterjee and F. Matsuno, "Improving EKF-based solutions for SLAM problems in Mobile Robots employing Neuro-Fuzzy Supervision," *Proc. 3rd IEEE Conference on Intelligent Systems (IEEE-IS'06)*, London, UK, Sep. 04 - 06, 2006.

3. A. Chatterjee and F. Matsuno, "Bacterial Foraging Techniques For Solving EKF-Based SLAM Problems," *Proc. International Control Conference (Control2006)*, Glasgow, UK, Aug. 30- Sep. 01, 2006.
4. S. Dutta, A. Chatterjee, and S. Munshi "A statistical feature extraction strategy for segregation of clinical gait signals," *Proc. International Conference on "Emerging trends in Electrical Engineering"*, Kolkata, India, January 12-14, 2007.
5. N. Sanyal, A. Chatterjee, and S. Munshi "A cascade model of wavelet filters and neural networks for diagnosis of epilepsy using EEG signals," *Proc. International Conference on "Emerging trends in Electrical Engineering"*, Kolkata, India, January 12-14, 2007.
6. S. Panja, M. Maitra and A. Chatterjee, "Image segmentation using multilevel thresholding based on particle swarm optimization," *Proc. International Conference on "Emerging trends in Electrical Engineering"*, Kolkata, India, January 12-14, 2007.
7. A. Chatterjee, R. Chatterjee, F. Matsuno, and T. Endo, "A stable state-feedback fuzzy controller employing linear matrix inequalities for flexible link robotic arm," *Proc. 3rd IEEE International Conference in Industrial Informatics (INDIN2005)*, Perth, Australia, 10-12 August, 2005.
8. M. Dutta, A. Chatterjee, and A. Rakshit, "A resilient backpropagation neural network based phase correction system for automatic digital ac bridges," *Proc. IEEE Conference on Precision Electromagnetic Measurements, CPEM 2004*, London, UK, June-July, 2004.
9. K. Watanabe, A. Chatterjee, K. Pulasinghe, K. Izumi, and K. Kiguchi, "A fuzzy-neural network based human machine interface for voice-controlled robots trained by a particle swarm optimization," *Proc. 4th International Symposium on Advanced Intelligent Systems (ISIS 2003)*, Cheju National University, Jeju Island, Korea, September 2003.
10. K. Watanabe, A. Chatterjee, K. Pulasinghe, S-H. Jin, K. Izumi, and K. Kiguchi, "Training of fuzzy-neural network for voice-controlled robot systems by a particle swarm optimization," *Proc. 2003 International Conference on Control, Automation, and Systems, ICCAS 2003*, Gyeongju, Korea, October 2003.
11. A. Chatterjee, S. Munshi, M. Dutta, and A. Rakshit, "An artificial neural linearizer for capacitive humidity sensor," *Proc. 17th IEEE Instrumentation and Measurement Technology Conference (IMTC 2000)*, Baltimore, USA, May, 2000.

13. SPONSORED PROJECTS UNDERTAKEN

Name of the Project	Sponsor	Worked /working as	Project Status
Solving Simultaneous Localization and Mapping Problems of Mobile Robots by Adaptive Extended Kalman Filtering	AICTE	Principal Investigator	On-going
Vision Based Autonomous Navigation of Mobile Robots	UGC	Principal Investigator	On-going

14. RESEARCH GUIDANCE COMPLETED

M.E.E. Thesis

Sl. No.	Title	Year	Candidate
1	Robust watershed image segmentation employing Wavelet transform	2007	Venkata Koteswararao K
2	Cross-correlation aided support vector machine classifiers for EEG and emotional speech signals	2007	Suryannarayana Chandaka
3	Investigations in tuning philosophy for Smith Predictor based control systems	2003	K. R. Joyson
4	Development of various fuzzy control algorithms	2002	Satyajit Bhattacharya
5	Development of an integrated fuzzy system environment	2000	Abhilash Mukherjee
6	Development of a low-cost information network	2000	Biswajit Majumder
7	Effect of inter-turn capacitance of ratio windings on the performance of current comparator based capacitance bridge	1999	Sunil S. Rao
8	Road traffic control system using programmable logic controller	1998	Indrani Basu
9	Development of knowledge based system for measurement of temperature and pressure	1998	Swapna Saha