

## CURRICULUM VITAE



### 1. Personal Reference:

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**Date of Birth:** 14/06/1966

**Institution Address:** Professor,  
Department of Computer and System Science,  
Visva Bharati, Santiniketan  
District - Birbhum,  
West Bengal, India  
PIN – 731235.

**Blood Group:** B Positive.

### 2. Academic Qualification:

- ❑ Passed Madhyamik examination from West Bengal Board of Secondary Education in **1983**.
- ❑ Passed Higher Secondary examination from West Bengal Council of Higher Secondary Education in **1985**.
- ❑ Passed B. Stat (Hons.) from Indian Statistical Institute, Calcutta in **1988**.
- ❑ Passed M. Stat from Indian Statistical Institute, Calcutta in **1990**.
- ❑ Passed M. Tech (Computer Science) from Indian Statistical Institute, Calcutta in **1993**.
- ❑ Awarded Ph. D from Bengal Engineering and Science University, Shibpur in **2005**.  
(Title: **Evaluating Performance of Evolutionary Algorithms**)

### 3. List of Projects Implemented/Ongoing:

- Executed an AICTE sponsored project on Modernization and Removal of Obsolescence (MODROBS) of amount **Rs. 10.00 lakhs** for the Department of Computer Science & Engineering, Kalyani Government Engineering College as the Head of the concerned Department. The project started in **March 2004** and completed in **February 2006**.
- Completed DST funded project entitled “*Development of an Intelligent Recognizer of Component Analysis of Manhole Gas Mixture*” in Collaboration with Bengal Engineering and Science University, Shibpur of amount **Rs. 33.00 lakhs** (approx.) during **October 2010** till **March 2013**.

### 4. Membership of Scientific and Professional Societies:

- ♦ **Life Member** of the Indian Science Congress Association (6799 vide year 1994)
- ♦ **Life Fellow** of the Institution of Electronics and Telecommunication Engineers (F 152182 vide year 2002)
- ♦ **Life Member** of the Indian Society for Technical Education (LM 33643 vide year 2002)
- ♦ **Life Fellow** of the Optical Society of India (L 429 vide year 2004)
- ♦ **Life Member** of the Indian Unit of International Association for Pattern Recognition (Indian Affiliate of *International Association for Pattern Recognition*) (L 038 vide year 2005)
- ♦ **Life Member (Senior)** of the Computer Society of India (00138036 vide year 2006)
- ♦ **Life Member** of the International Association of Engineers (vide 62582 since year 2007).
- ♦ **Senior Member** of Association for Computing Machinery (9622185 since year 2007)
- ♦ **Life Member** of Advanced Computing and Communication Society (9622185 since year 2009)
- ♦ **Senior Member** of IEEE Computer Society (90586806 since year 2009), Computational Intelligence Society (since 2012)
- ♦ **Life Member (Senior)** of International Association of Computer Science and Information Technology (80343506 vide year 2011).
- ♦ **Life Member** of System Society of India (LM – 31964 vide year 2012).
- ♦ **Life Member** of the World Academy of Science Engineering and Technology (since 2012).
- ♦ **Life Member** of Indian Society of Remote Sensing (since 2012).

### 5. Honours of Note:

- **Advisor** to the West Bengal Pollution Control Board for their networking of different branches across West Bengal in **1998**.

- **Member** of the recruitment board for inducting Programmer in the West Bengal Pollution Control Board in the year **1999**.
- **Member** of the recruitment board for inducting IT Officers in the Allahabad Bank in the year **2004**.
- **Member** of the Research Board of Advisors of the American Biographical Institute for distinguished standing since **2004**.
- **Member** of Board of Studies in Computer Applications of the University of Kalyani in **2005**.
- **Member** of Board of Studies in Computer Science of the University of Kalyani in **2007**.
- **Member** of Academic Council of Visva Bharati, Santiniketan since November, **2007**.
- **Member** of the Departmental Promotion Committee of Visva Bharati, Santiniketan since **2009**.
- **Reviewer** of various Journals including –
  1. IEEE Transactions on System, Man and Cybernetics
  2. Pattern Recognition
  3. Signal Processing
  4. IEEE Communication Letters
  5. Journal of Phytopathology
- **Member** Expert nominated by the Ministry of Human Resource and Development, Government of India of the Selection Committee for award of Commonwealth Scholarship offered by the Government of United Kingdom, **2010**.
- **Member** of panel of Judges of the Young IT Professional Awards, Eastern Regional Contest, conducted by the Computer Society of India, Kolkata Chapter, held on **16.01.2010**.
- **Member** of Technical Committee of the West Bengal Board of Joint Entrance Examination during **2009 to 2011**.
- **Member** of Board of Undergraduate Studies in Computer Science of Kalyani University since **2011**.
- **Member** of Board of Studies in Computer Science, Information Technology and Computer Application of West Bengal University of Technology since **2011**.
- **Member** of the School Board of Triguna Sen School of Technology of Assam University, Silchar since **2011**.
- **Member** Chairman nominated by the University Grants Commission, Govt. of India of the Review Committee of the Special assistance Programme in the Department of Computer Science and Automaton, Indian Institute of Science, Bangalore in November **2011**.
- **Member** of Scientific Committee and Editorial Review Board on Engineering and Applied Sciences of World Academy of Science Engineering and Technology.
- **Member** of Board of Studies in Computer Science and Engineering of Narula Institute of Technology, Kolkata since **2012**.
- **Member** of panel of Judges of the Student Research Convention, conducted by the West Bengal University of Technology on **29.01.2013**.
- **Member** of Board of Studies in Post Graduate Studies in Computer Science and Engineering of Tripura University since **2013**.

- **Advisor** to the Central Mechanical Engineering Research Institute, Durgapur funded by the Council of Scientific and Industrial Research (CSIR), Govt. of India for their Research project on “Smart Home Energy Efficient Technology Environment” at Embedded System Laboratory since **2013**.
- **Member** of the Expert Inspection Team appointed by the West Bengal University of Technology in visits during **2013, 2014, 2015**.
- **Member** of Expert Committee for Faulty Appraisal of the Asansol Engineering College held on **17.08.2013**.
- **Member** of the Departmental Advisory Board of the Department of Information Technology of the RCC Institute of Information Technology, Kolkata since **2014**.
- **Session Chair** in various Conferences/seminars/seminars –
  1. Technical Session in International Conference on Computational Intelligence and Communication Networks (CICN 2012), Mathura, India, **November 2012**.
  2. Technical Session in International Conference on Computer, Communication, Control and Information Technology (C3IT 2013), Adisaptagram, West Bengal India, **January 2013**.
  3. Technical session in Zonal Seminar on ICT in present Wireless Revolution on **31.08.2013**
  4. Technical Session in International Conference on Computational Intelligence: Modeling, Techniques and Applications (CIMTA 2012), Kalyani, India, **September 2013**.
  5. Technical Session in International Conference on IEEE International Conference on Computational Intelligence and Communication Networks (ICCICN 2014), Kolkata, India, **November 2014**.
  6. Technical Session in International Conference on Emerging Applications in Information Technology (EAIT 2014), Kolkata, India, **December 2014**.
  7. Technical Session in International Conference on Computer, Communication, Control and Information Technology (C3IT 2015), Adisaptagram, West Bengal India, **February 2015**.
- **Member** of Selection Board for Faculty recruitment in various Universities/Institutes encompassing
  1. National Institute of Technology, Arunachal Pradesh
  2. Assam University, Silchar, Assam
  3. Sambalpur University, Orissa
  4. Visva Bharati University, Santiniketan, West Bengal
  5. Burdwan University, Burdwan, West Bengal
  6. Bengal Institute of Technology and Management, Santiniketan
  7. Supreme Knowledge Foundation Group of Institutions, Mankundu
  8. College of Engineering and Management, Kolghat
  9. Utkal University, Bhubaneswar
  10. Academy of Technology, Adisaptagram
  11. West Bengal Public Service Commission

## 6. Lectures on Invitation:

- Invited lecture in the Department of Science and Technology (Government of India) funded National Instructional Workshop on '*Recent Trends & New Directions of Research in Cybernetics and System Theory*', held in the Institute of Advanced Study in Science and Technology, India during **28/01/2004** to **01/02/2004**.
- Invited lecture in the AICTE-ISTE sponsored two week winter school on '*Multimedia Programming*', in the Department of Information Technology of Kalyani Government Engineering College during **13/12/2004** to **24/12/2004**.
- Invited lecture in the AICTE sponsored two week winter school on '*Soft Computing*', in the Department of Computer Science and Technology of Bengal Engineering and Science University, Shibpur on **05/07/2005**.
- Invited talk in the Department of Computer Science and Engineering of National Institute of Technology, Durgapur on '*Multi Objective Optimization using Soft Computing techniques*', held on **22/12/2005**.
- Invited lecture in the TEQIP sponsored one day seminar on '*Evolutionary and Other Soft Computing Techniques in Engineering Applications*', in the Department of Computer Science and Technology of Kalyani Government Engineering College on **28/02/2006**.
- Invited lecture in the TEQIP sponsored one day seminar on '*Frontiers of Evolutionary Computation & Fuzzy Sets and Systems*', organized by the Department of Computer Science and Engineering in collaboration with the Department of Information Technology of Asansol Engineering College on **28/08/2006**.
- Invited lecture in the AICTE sponsored staff development programme on '*Soft Computing Techniques*', organized jointly by the Department of Computer Science and Engineering and Department of Information Technology of Siliguri Institute of Technology on **28/07/2007**.
- Invited lecture in the UGC sponsored three weeks' Refresher Course on '*Computer Applications*', organized by the Department of Computer Science and Engineering of Kalyani University on **16/01/2008**.
- Invited lecture in the AICTE sponsored Staff Development Programme on 'GIS and GPS – Theory and Practice' organized by the Department of Computer Application of Kalyani Government Engineering College on **03/03/2009**.
- Invited lecture on 'Multiobjective optimization' in the AICTE sponsored Staff Development Programme organized by the Department of Information Technology of RCC Institute of Information Technology on **07/03/2009**.
- Invited lecture in the Conference on 'Recent Trends in Computing Technologies' organized by B. P. Poddar Institute of Management and Technology on **28/03/2009**.
- Invited talk on 'Data Mining – Applications in GIS' in the AICTE sponsored Staff Development Programme organized by the Department of Computer Applications of RCC Institute of Information Technology on **10/07/2009**.
- Invited lecture on 'Data Mining and Data Warehousing' organized by the Department of Computer Science of the St. Xavier's College on **31/10/2009**.
- Invited Fullbright guest lecture on 'Genetic Algorithms – Theory and Applications' organized by the Department of Information Technology of MCKV Institute of Engineering on **25/11/2009**.

- Invited talk in the AICTE sponsored Staff Development Programme organized by the Department of Computer Science and Engineering of the Kalyani Government Engineering College during **07/06/2010 – 19/06/2010**.
- Invited talk on 'FEW-CA Protocol for Mobile Ad hoc Network' in the Fourth International Conference on "Recent Trends in Mathematics Technology and Management" organized by the Bengal Institute of Technology & Management" on **22/01/2012**.
- Invited lecture on "Development of an Intelligent Gas Recognizer for Analysis of Sewer Gases" in the TEQIP (Phase – II) sponsored Seminar on "Advances in Soft Computing" organized by RCC Institute of Information Technology on **24/07/2012**.
- Invited talk on 'Fuzzy-logic Controlled Cheat-proof Adaptive Demand-driven Routing Protocols For Mobile Ad Hoc Networks' in the International Workshop organized by B. C. Roy Engineering College, Durgapur on **20/11/2012**.
- Invited lecture on "Dynamics of Evolutionary Algorithm: An Insight" in the TEQIP (Phase – II) sponsored Staff Development Programme on "Soft Computing and its Applications" organized by the Department of Information Technology of RCC Institute of Information Technology on **20/03/2013**.
- Invited lecture series on "System Analysis and Design" at the Department of Computer Science and Engineering of National Institute of Technology, Agartala during **12/04/2013 - 14/04/2013**.
- Invited lecture on "An insight into Dynamics of Evolutionary Algorithm" in the TEQIP (Phase – II) sponsored Staff Development Programme on "Soft Computing" organized by the Department of Computer Science and Information Technology of University Institute of Technology, Burdwan on **03/07/2013**.
- Invited lecture on "Fuzzy Mathematics in Machine Learning" in the TEQIP (Phase – II) sponsored Staff Development Programme on "Continuing Educational Programme in Machine Intelligence" organized by the Department of Computer Science and Engineering of Heritage Institute of Technology, Kolkata on **16/07/2013**.
- Invited lecture on "Development of an Intelligent Gas Recognizer for Analysis of Sewer Gases" in the TEQIP (Phase – II) sponsored Staff Development Programme on "Advances in Computer Science and Information Technology" organized by the Department of Computer Science and Engineering of North Eastern Regional Institute of Science and Technology, Arunachal Pradesh on **28/08/2013**.
- Invited lecture on "Introduction to LATEX" in the UGC sponsored Workshop on "Computational Tools and Open Source Software" organized by the UGC Academic Staff College of Burdwan University, Burdwan on **31/08/2013**.
- Invited lecture on "Fuzzy Mathematics and Machine Learning" in the TEQIP (Phase – II) sponsored Faculty Development Programme on "Recent Trends in Information Technology" organized by the Department of Information Technology of College of Engineering and Management, Kolaghat on **10/11/2013**.
- Invited lecture on "MujltiObjective Optimization" in the TEQIP (Phase – II) sponsored Continuing Education Programme on "Soft Computing and its Application" organized by the Department of Computer Science and Engineering of Narula Institute of Technology, Kolkata on **13/11/2013**.
- Invited lecture on "An insight into Dynamics of Evolutionary Algorithm" in the TEQIP (Phase – II) sponsored Faculty Development Programme on "Recent Development in

Computer Science and Engineering” organized by the Department of Computer Science and Engineering of Govt. College of Engineering and Textile Technology, Berhampore, West Bengal on **16/11/2013**.

- Invited lecture on “Fuzzy Rule Guided Image Segmentation” in the TEQIP (Phase – II) sponsored Faculty Development Programme on “Recent Advances in Image Processing” organized by the Department of Computer Science and Engineering of Murshidabad College of Engineering and Technology, Berhampore, West Bengal on **16/11/2013**.
- Invited lecture series on “Technical features of LATEX - An Insight” in the TEQIP (Phase – II) sponsored National Workshop on “Document Preparation using LATEX” organized by the Department of Computer Science and Information Technology of National Institute of Technology, Patna during **23/12/2013 – 24/12/2013**.
- Invited Plenary lecture on “Technology beyond CMOS – A Quantum dot Cellular Automata Approach” in the TEQIP (Phase – II) sponsored International Conference on “Recent Trends in Science and Technology” organized by the Department of Computer Science and Engineering of College of Engineering and Management, Kolaghat on **28/12/2013**.
- Invited lecture on “Fuzzy Mathematics and Machine Learning” in the UGC Refresher Course in Information Technology organized by A. K. Chaudhury School of Information Technology of the University of Calcutta on **06/01/2014**.
- Invited lecture on “Insight into the Dynamics of Evolutionary Algorithm” in the UGC Refresher Course in Information Technology organized by A. K. Chaudhury School of Information Technology of the University of Calcutta on **08/01/2014**.
- Invited lecture on “LATEX – A Documentation Software” in the TEQIP (Phase – II) sponsored Faculty Development Programme on “Recent Trends in Research and Research Methodology” organized by the Department of Information Technology of the RCC Institute of Information Technology, Kolkata, West Bengal on **09/01/2014**.
- Invited full-day lecture cum laboratory session on "Scientific Document Processing using LATEX" organized by the Department of Electrical Engineering of Academy of Technology, Adisaptagram, West Bengal on **31/01/2014**.
- Invited lecture on “Temporal Characterization in Mobile Ad hoc Environment” in the TEQIP (Phase – II) sponsored Faculty Development Programme on “Computational Intelligence” organized by the Department of Information Technology of the RCC Institute of Information Technology, Kolkata, West Bengal on **12/03/2014**.
- Invited one day lecture on “LATEX – A documentation software” in the TEQIP (Phase – II) sponsored Faculty Development Programme organized by the Department of Information Technology of the Assam University, Silchar, Assam on **25/03/2014**.
- Invited lecture on “**Temporal Characterization in Mobile Ad hoc Environment**” in the TEQIP (Phase – II) sponsored Faculty Development Programme on “Recent Advancements in Wireless and Mobile Network Technologies” organized by the Department of Information Technology of the RCC Institute of Information Technology, Kolkata, West Bengal on **24/07/2014**.
- Invited lecture on “Fuzzy Mathematics in Machine Learning” in the National Workshop on “Optimization and Fuzzy Mathematics” organized by the Vidyasagar University on **11/09/2014**.

- Invited lecture in the National Workshop on “Recent Advances in Applied Mathematics” organized by the National Institute of Technology Agartala on **20/09/2014**.
- Invited lecture in the International Conference on Emerging Applications of Information Technology organized by the Computer Society of India at the Indian Statistical Institute Calcutta on **20/12/2014**.
- Invited one day lecture on “Temporal Characterization in Mobile Ad hoc Environment” organized by and at the Department of Computer Science and Engineering of the Indian Institute of Technology, Guwahati, Assam on **06/01/2015**.
- Invited lecture on the occasion of the Foundation day of the National Institute of Technology Patna National on “Multi Objective Optimization Problem” held on **28/01/2015**.

### 7. Employment Record:

- Engaged at present as **Professor** in the Department of Computer and System Sciences of Visva Bharati University, Santiniketan, West Bengal, India from **01/11/2007** till date.
- Served as **Professor** and **Head** of the Department of Computer Science and Engineering of Kalyani Government Engineering College, West Bengal, India during **23/02/2007** to **31/10/2007**.
- Served as **Assistant Professor** in the Department of Computer Science and Engineering of Kalyani Government Engineering College, West Bengal, India during **03/07/2001** to **22/02/2007**. Also remained as **Head** in this designation during **28/02/2004** to **22/02/2007**. The list of milestones achieved/ events held during his tenure as the departmental head –
  1. Implementation of MODROBS project (**March 2004** to **January 2006**).
  2. Commencement of All India Council for Technical Education (AICTE) approved M. Tech Programme in Computer Science and Engineering in the Department from session **2004**.
  3. Accordance of accreditation from the National Board of Accreditation (NBA) for a span of three years from **September 2004** till **September 2007** for the Department.
  4. Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on ‘*Information Technology for Rural Development*’ organized in association with the Computer Society of India, Kolkata Chapter on **22/01/2006**.
  5. Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on ‘*Evolutionary and Other Soft Computing Techniques for Engineering Applications*’ held on **28/02/2006**.
  6. Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on ‘*Mobile Technology and Information Management*’ held on **03/04/2006**.
  7. Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on ‘*Internet Security*’ held on **28/04/2006**.
  8. Technical Education Quality Improvement Programme (TEQIP) sponsored one-day workshop on ‘*Cryptography – yesterday, today and tomorrow*’ held on **07/06/2006**.



9. Technical Education Quality Improvement Programme (TEQIP) sponsored National Conference on Recent Trends in Intelligent Computing (RTIC '06) scheduled during **17 – 19 November 2006**.
- Served as **Assistant Professor & Head** in the Department of Computer Science and Engineering in the College of Engineering and Management, Kolaghat, West Bengal, India from **24/08/1998** to **02/07/2001** prior to changeover to present assignment.
  - Served as **Research Scientist** in the project on Target Tracking sponsored by Defence Research Development Organization (DRDO) in the Department of Computer Science and Technology of Bengal Engineering and Science University, Shibpur, erstwhile Bengal Engineering College (Deemed University), Howrah, West Bengal, India from **11/01/1998** to **23/08/1998**.
  - Served as **Computer Consultant** in the project on Banking Network Programming in the Network Computer House, Bologna, Italy from **September 1997** to **November 1997**.
  - Associated to Apt Software Avenues Private Limited from **01/09/1997** to **01/12/1997**.
  - Served as **Programmer** in the project on '*Developing software package for directional data*', in the Applied Statistics Unit, erstwhile Computer Science Unit of the Indian Statistical Institute, Calcutta from **14/08/1996** to **31/03/1997**.
  - Engaged as **Senior Research Fellow** under the Emeritus Scientist Scheme of the Council of Scientific and Industrial Research (CSIR) in the Electronics and Communication Sciences Unit of the Indian Statistical Institute, Calcutta from **19/08/1993** to **13/08/1996**.
  - Engaged as **Trainee** in a project on Fisheries in the Applied Statistics Unit, erstwhile Computer Science Unit of the Indian Statistical Institute, Calcutta from **01/08/1990** to **30/03/1991**.

#### 8. List of Short Term Course(s) Attended:

- CIMPA-UNESCO sponsored two week summer school on '*Object Oriented Programming*', held at Nice, France during **01/07/1996** to **12/07/1996**.
- In-house Programme on '*Educational Technology*' organized by the National Institute of Technical Teachers' Training and Research, Kolkata, erstwhile Technical Teachers' Training Institute, Eastern Region during **13/03/2002** to **15/03/2002**.
- AICTE-ISTE sponsored two week winter school on '*Biomedical Imaging*', held during **10/11/2003** to **21/11/2003** in the Department of Computer Science and Engineering of the North Eastern Regional Institute of Science & Technology, Nirjuli, Arunachal Pradesh, India.
- Winter School on '*Information Theory and Coding*', held during **29/12/2003** to **02/01/2004** in the Applied Statistics Unit of the Indian Statistical Institute, Kolkata, West Bengal, India.
- Winter School on '*Digital Signal Processing & its Applications*', held during **19/01/2004** to **27/01/2004** in the Department of Electronics & Communication Engineering of the Indian Institute of Technology, Guwahati, Assam, India.

- Summer School on '*Advanced Algorithms*', held during **19/07/2004** to **23/07/2004** in the Department of Computer Science & Engineering of the Indian Institute of Technology, Guwahati, Assam, India.
- Short Training programme on '*.NET Technology core concepts and its various features*', organized by ARDENT Collaborations during **08/10/2004** to **10/10/2004**.
- AICTE sponsored short term course on '*Application of Virtual Reality in Mineral Industry*' held during **31/01/2005** to **04/02/2005** in the Department of Mining Engineering of the Indian Institute of Technology, Kharagpur, West Bengal, India.
- Short Term training programme on '*Multimedia and Authoring Software*' held during **06/06/2005** to **10/06/2005** in the Department of Computer Science and Engineering of the National Institute of Technical Teachers' Training and Research, Kolkata, West Bengal, India.
- Short course on '*Genetic Algorithm for Engineering Optimization*' held during **20/07/2005** to **22/07/2005** in Kanpur GA Laboratory (KanGAL) of the Department of the Mechanical Engineering, Indian Institute of Technology, Kanpur, India.
- Short Term training programme on '*Multimedia based Instructional Software Development*' held during **08/08/2005** to **12/08/2005** in the Department of Computer Science and Engineering of the National Institute of Technical Teachers' Training and Research, Kolkata, West Bengal, India.

#### **9. List of Short Term Course(s)/Programmes Organized:**

- ❑ Remained Coordinator AICTE-ISTE sponsored winter school on '*Windows Programming: GUI*' held in the Department of Computer Science & Engineering of Kalyani Government Engineering College, West Bengal, India during **06/01/2003** to **16/01/2003**.
- ❑ Acted as Joint Convener of Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on '*Information Technology for Rural Development*' organized in association with the Computer Society of India, Kolkata Chapter held in the Department of Computer Science and Engineering of Kalyani Government Engineering College on **22/01/2006**.
- ❑ Acted as Convener of Technical Education Quality Improvement Programme (TEQIP) sponsored one-day seminar on '*Internet Security*' organized by the Department of Computer Science and Engineering of Kalyani Government Engineering College on **28/04/2006**.
- ❑ Acted as Coordinator of Technical Education Quality Improvement Programme (TEQIP) sponsored one-day workshop on '*Cryptography – yesterday, today and tomorrow*' organized by the Department of Computer Science and Engineering of Kalyani Government Engineering College on **07/06/2006**.
- ❑ Acted as Coordinator of Technical Education Quality Improvement Programme (TEQIP) sponsored National Conference on '*Recent Trends in Intelligent Computing*' organized by the Department of Computer Science and Engineering of Kalyani Government Engineering College scheduled during **17 – 19 November 2006**.

#### **10. List of Conference/Seminar/Workshop(s) Attended:**

- ♦ **Seminar** on “*Problems of Large Scale Sample surveys in India*”, held in the Applied Statistics Unit, erstwhile Computer Science Unit of the Indian Statistical Institute, Calcutta during **26/12/1990** to **27/12/1990**.
- ♦ **Seminar** on “*Algebra and its application to Computer Science*”, in the memory of Late Professor S. P. Bandyopadhyaya, held in the Department of Pure Mathematics of the University of Calcutta during **29/05/1995** to **02/06/1995**.
- ♦ **National Seminar** on “*Theoretical Computer Science – 5*”, held in the Bhaba Atomic Research Centre, Bombay during **01/08/1995** to **04/08/1995**.
- ♦ **Ninth International Conference** on “*VLSI Design*”, held in the Indian Institute of Science, Bangalore in **January 1996**.
- ♦ **National Seminar** on “*Theoretical Computer Science – 6*”, held in the Banasthali Vidyapith, Rajasthan during **05/08/1996** to **08/08/1996**.
- ♦ **One day Seminar** on “*Statistical challenges in observational studies related to chronic diseases*”, held in the Applied Statistics Unit, erstwhile Computer Science Unit of the Indian Statistical Institute, Calcutta on **25/03/1997**.
- ♦ **Third International Triennial Symposium** on “*Probability and Statistics*”, held in the Department of Statistics of the University of Calcutta during **26/12/1997** to **28/12/1997**.
- ♦ **Regional Conference** on “*Operational Research in the Age of Information Technology*”, held in the National Institute of Management, Calcutta during **27/11/1999** to **28/11/1999**.
- ♦ **National Seminar** on “*The Role of Information Technology in the next millennium*”, held in the National Institute of Technology, Durgapur on **18/12/1999**.
- ♦ **National Workshop** on “*Industry Institute Partnership under Changing Economic Environment*”, held in the Jadavpur University during **19/09/2000** to **20/09/2000**.
- ♦ **Second Workshop** on “*Distributed Computing*”, held in the Jadavpur University during **28/12/2000** to **30/12/2000**.
- ♦ **National Workshop** on “*Patent Awareness and Technology Transfer*”, held in the Indian Institute of Technology, Kharagpur on **10/04/2001**.
- ♦ **National Workshop** on “*IT & Communication*”, held in the University Institute of Technology, University of Burdwan on **12/08/2001**.
- ♦ **Two day International Workshop** on “*Computational Geometry*”, held in the Advanced Computation and Microelectronics Unit of the Indian Statistical Institute, Calcutta during **18/03/2002** to **19/03/2002**.
- ♦ **One day IEEE Workshop** on “*Wireless Networking and Mobile Computing*”, held in the Indian Association for Cultivation of Science on **13/03/2004**.
- ♦ **Fourth Indian Conference** on “*Computer Vision, Graphics and Image Processing*”, held at Science City Auditorium organized by the Indian Statistical Institute, Calcutta during **16/12/2004** to **18/12/2004**.
- ♦ **National Conference** on “*Emerging Technologies in Electronics and Communications (NCETEC ‘2005)*”, held at Bharath Institute of Higher Education and Research, Chennai during **18/03/2005** to **19/03/2005**.
- ♦ **International Workshop** on “*Spatial Issues in Language and Vision*”, held in the Indian Institute of Technology, Kanpur on **24/03/2005**.

- ♦ **Two day Workshop** on “*Microelectronics and VLSI Design Techniques*”, held in the Department of Electronics and Communication Engineering of the Kalyani Government Engineering College during **17/09/2005** to **18/09/2005**.
- ♦ **International Conference** on “*Optics and Optoelectronics*”, held at IRDE, Dehradun during **12/12/2005** to **15/12/2005**.
- ♦ **One day Seminar** on “*Mobile Technology and Information Management*”, held in the Department of Computer Science and Engineering of the Kalyani Government Engineering College on **03/04/2006**.
- ♦ **One day State level Seminar** on “*Mobile Computing and Network Security*”, organized by the Department of Computer Application of RCC Institute of Information Technology held on **09/03/2007**.
- ♦ **Two day National Workshop** on “*Use and Deployment of Web and Video Courses for Enriching Engineering Education*”, organized jointly Indian Institute of Technology, Kharagpur, Indian Institute of Technology, Kanpur and Indian Institute of Technology, Guwahati held at Indian Institute of Technology, Guwahati during **20/05/2007** to **21/05/2007**.
- ♦ **Two day National Workshop** on “*Signal Processing and its Application to Software Defined Radio*”, organized by Government College of Engineering and Ceramic Technology held during **11/01/2008 – 12/01/2008**.
- ♦ **International Conference** on “*Advances in Computing*”, held at Anuradha Engineering College during **21/02/2008** to **22/02/2008**.
- ♦ **Three day Workshop followed by Two day Tutorial** on “*Geographical Information System, Image Processing and GPS*”, organized jointly by the Department of Computer Application and Department of Computer Science and Engineering of Kalyani Government Engineering College during **27/06/2008** to **01/07/2008**.
- ♦ **Five day National Workshop** on “*Challenges in VLSI Design: Cutting edge perspective*”, organized by the Department of Information Technology of Bengal Engineering and Science University, Shibpur held during **21/07/2008 – 25/07/2008**.
- ♦ **Joint International Conference** on “*Swarm, Evolutionary & Memetic Computing*” (SEMCCO) and “*Fuzzy and Neural Computing Conference*” (FANCCO) organized by the Anil Neerukonda Institute of Technology and Sciences, Visakhapatnam, India held during **19/12/2011 – 21/12/2011**.
- ♦ **First International Symposium** on “*Physics and Technology of Sensors*” (ISPTS - 1) held at Pune, India during **08/03/2012 – 10/03/2012**.
- ♦ **International Conference** on “*Computational Intelligence and Communications Networks*” (CICN 2012) held at GLA University Mathura, India during **03/11/2012 – 05/11/2012**.

#### **11. Other Professional Experience:**

- Undertook teaching assignments in the Regional Police Computer Centre, Calcutta in **1994, 1995**.
- Undertook teaching assignment in one year evening course in the Indian Statistical Institute, Calcutta in **1995**.

- Undertook teaching assignments in the M. Phil. Course in Computer Applications in the Department of Statistics, University of Calcutta in the sessions **1996 – 1997, 1997 – 1998 and 1998 – 1999.**
- Undertook teaching assignment in the Department of Electronics and Telecommunication Engineering of the Bengal Engineering and Science University, Shibpur, erstwhile Bengal Engineering College (Deemed University) in the session **1997 - 1998.**
- Undertook teaching assignment as a **Guest Faculty** in the MCA programme in the National Institute of Management, Calcutta during –
  - (1) **10/01/2000 – 01/04/2000** (Term III) for *Systems Programming*.
  - (2) **04/04/2000 – 17/06/2000** (Term IV) for *Operating Systems*.
  - (3) **24/09/2001 – 14/12/2001** (Term VI) for *Windows Programming: GUI*.
- Undertook teaching assignment as a **Guest Faculty** in the School of Information Technology, West Bengal University of Technology, erstwhile Indian Institute of Information Technology, Calcutta in **2004.**
- Undertook teaching assignment as a **Guest Faculty** in the Department of Computer Science and Technology, Bengal Engineering and Science University, Shibpur in **2008, 2009.**
- Undertook teaching assignment as a Guest Faculty in the Department of Computer Science and Engineering, Kalyani University in **2009, 2010.**
- Undertook teaching assignment as a Guest/Visiting Faculty/Fellow in both Department of Computer Science and Engineering and/or Department of Information Technology, Tripura University in **2009, 2010, 2011, 2012, 2013, 2014**
- Undertook teaching assignment as a Guest Faculty in both Department of Computer Science and Engineering, National Institute of Technology, Arunachal Pradesh in **2013**
- Undertook teaching assignment as a Guest Faculty in both Department of Computer Science and Engineering, National Institute of Technology, Agartala in **2013**
- Undertook teaching assignment as a Guest Faculty in the Department of Management Studies of the West Bengal University of Technology Kolkata since **January 2015.**

## 12. List of M. Tech Projects Supervised:

### Submitted in 2006:

- '*Generalized Simulator for Quantum Network*' submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- '*Customized Desktop Environment*' submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- '*Study on some Temporal Characteristics of Entropy in an Ad Hoc Mobile Environment*' submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- '*Study on influence of density of nodes on entropy in an Ad Hoc mobile environment*' submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.

- *'Design of Data Logger using Embedded Micro-controller and Interprocessor Communication'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Development of Spoken Bangla Sandhi Generator'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Defining Pulse Sequences for NMR based Quantum Computation'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Gray Scale Object Extraction'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Ponzo and related Illusion'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Image Clustering and Retrieval using Wavelet'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Study on Poggendorf and Related Illusion'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- *'Segmentation of Color Images'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.

#### **Submitted in 2007:**

- *'Design of e-nose for vapour identification using multilayer perceptron'* submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Quantum Circuit Synthesis using Genetic Algorithm'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Analysis of Self Adjusted Non-backpropagative Neural Network (SANBNN) using various Activation Functions for Individual Vapour Identification in e-nose Design'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Quantum Circuit Optimization applying Genetic Algorithm'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Evaluation Framework for Indian Language Information Retrieval'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Study and Analysis of Hering and Wundt Illusion'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'Study and Analysis of Zollner Illusion'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'3D surface detection and object extraction' 'Study and Analysis of Hering and Wundt Illusion'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- ***'A type Safe Intel X86-64 assembler'*** submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.

#### **Submitted in 2008:**

- '*A type Safe Intel X86-64 assembler*' submitted to the Department of Computer Science and Engineering of Kalyani Government Engineering College.
- '*Fuzzy Rule based Image Extraction Technique*' submitted to the Department of Information Technology of University of Calcutta.

### 13. List of Ph.D Supervision:

#### Degree awarded –

- Supervised **Dr. Anuradha Banerjee** for her Ph.D entitled '*Design and Performance Evaluation Of a Fuzzy Logic Controlled Cheat-proof Demand Adaptive Routing Protocol For Mobile Ad-Hoc Networks*', registered as a part time scholar with the Department of Computer Science and Engineering of the West Bengal University of Technology vide Notification No. 27.02.2004/Regis/Ph.D/2008 dated 27.02.2008. **(Degree awarded)**
- Supervised **Dr. Koushik Mondal** for his Ph.D entitled '*Fuzzy Rule Guided Intelligent Image Segmentation*', registered as a full time Scholar with the Department of Computer and System Sciences of the Visva Bharati vide Memo No. G/R-6.7/223/2008-2009 dated 15/07/2008. He worked as a Junior Research Fellow under the World Bank sponsored Technical Education Quality Improvement Programme (TEQIP) during August 2006 to July 2008. **(Degree Awarded)**

#### Submitted and Degree yet to be awarded –

- Supervised **Mr. Jyoti Prakash Singh** for his Ph.D enrolled as a part time scholar with A. K. Choudhury School of Information Technology of the University of Calcutta with effect from 21.02.2011.

#### Registered and Degree yet to be awarded –

- Supervising **Mr. Kousik Dasgupta** for his Ph.D entitled '*Design and Implementation of Steganographic Engine for Secret Data Sharing and Authentication of Videos: An Overture*', registered as a part time scholar with the Department of Computer Science and Engineering of the University of Kalyani vide Notification No. Ph.D/Regn./N.Rgl./Eg-14/Com.Sc./KD/2011 dated 25.11.2011.
- Supervising **Mr. Dipankar Dutta** for his Ph.D enrolled as a part time scholar with the Department of Computer Science and Technology of the Bengal Engineering and Science University, Shibpur with effect from 01.07.2011 vide notification No. 132011E2 dated 13.07.2011.
- Supervising **Mr. Varun Kumar Ojha** for his Ph.D enrolled as a part time scholar with the Department of Computer Science and Engineering of the

#### 14. List of Publications:

##### Papers:

##### Journals-

- ✓ **P. Dutta and D. DuttaMajumder**, '*Performance evaluation of evolutionary class of algorithms – An application to 0-1 Knapsack problem*', in International Journal on Mathematical Computer Modeling, vol. 27, no. 7, pp. ~ 57 – 72, **1998**.
- ✓ **S. Bhattacharyya, P. Dutta, U. Maulik and P. K. Nandi**, '*A Self Supervised Bi-Directional Neural Network (BDSONN) Architecture for Object Extraction Guided by Beta Activation Function and Adaptive Fuzzy Context Sensitive Thresholding*', **International Journal of Intelligent Techniques** Vol. 1, No. 4, pp. ~ 345 – 365, **2006**.
- ✓ **S. Bhattacharyya and P. Dutta**, '*Designing pruned neighborhood neural networks for object extraction from noisy background*', **International Journal on Foundation of Computing and Decision Sciences**, Vol. 31, No. 2, pp. 105 - 134 **2006**.
- ✓ **S. Bhattacharyya, P. Dutta, U. Maulik and P. K. Nandi**, '*Multilevel Activation Functions for True Color Image Segmentation Using a Self Supervised Parallel Self Organizing Neural Network (PSOINN) Architecture: A Comparative Study*', **International Journal of Computer Science** Vol. 2, No. 1, pp. 9 – 21, **2007**.
- ✓ **S. Bhattacharyya, P. Dutta and U. Maulik**, '*Binary object extraction using bi-directional self-organizing neural network (BDSONN) architecture with fuzzy context sensitive thresholding*', **International Journal on Pattern Analysis and Applications** Vol. 10, pp. 345 – 360, **2007**.
- ✓ **S. Bhattacharyya, P. Dutta and U. Maulik**, '*Self Organizing Neural Network (SONN) Based Gray Scale Object Extarctor with a Multilevel Sigmoidal (MUSIG) Activation Functions*', accepted for publication in **International Journal on Foundation of Computing and Decision Sciences**, Vol. 33, No. 2, pp. 46 – 50, **2008**.
- ✓ **S. Bhattacharyya, U. Maulik and P. Dutta**, '*A Pruning Algorithm for Efficient Image Segmentation with Neighborhood Neural Networks*', **IAENG International Journal of Computer Science** Vol. 35, No. 2, **2008**.
- ✓ **S. Roychoudhury and P. Dutta**, '*Birth and death modeling of mobility uncertainty in mobile ad-hoc network*', **accepted for publication in International Journal on Computer Science and Applications**, **2008**.
- ✓ **S. Roychoudhury and P. Dutta**, '*Statistical Modeling of Mobility of Nodes in a Mobile Ad-hoc Network (MANET) using  $\beta$  Distribution*', **accepted for publication pending revision in IAENG Engineering Letters**, **2008**.



- ✓ **A. Banerjee and P. Dutta**, '*Fuzzy Controlled Adaptive Geo-casting in Mobile Ad-hoc Network*', **International Journal of Intelligent Techniques**, Vol. 14, No. 2, pp. 109 - 131, **2008**.
- ✓ **A. Banerjee and P. Dutta**, '*Fuzzy-Controlled Intelligent and Robust Multicast (FIRM) Routing in Mobile Ad Hoc Networks*', **International Journal on Communications of Systemics and Informatics World Network**, Vol. 4, pp. 45 – 50, **2008**.
- ✓ **S. Bhattacharyya, U. Maulik and P. Dutta**, '*High speed target tracking by fuzzy hostility induced segmentation of optical flow fields*', **International Journal on Applied Soft Computing**, Vol. 9, No. 1, pp. 126 – 134, **2009**.
- ✓ **A. Banerjee and P. Dutta**, '*Fuzzy-Controlled Intelligent and Robust Broadcasting (FIRB) in Ad Hoc*', **International Transactions on Systems Science and Applications**, Vol. 5, No. 1, pp. 44 - 59, **2009**.
- ✓ **J. P. Singh and P. Dutta**, '*Temporal Modelling of Node Mobility in Mobile Adhoc Network*', **International Journal of Computing and Information Technology**, Vol. 18 No. 1, pp. 19 – 29, **2010**.
- ✓ **A. Banerjee, P. Dutta**, '*Fuzzy Controlled Source Initiated Multicasting (FSIM) in Ad Hoc Network*'s, **Lecture Notes in Computer Science**, Vol. 5966/2010, pp. 55-71, doi: 1007/978-3-642-11659-9\_5, **2010**.
- ✓ **A. Banerjee, P. Dutta**, '*Binary Location Search-based Scalable Routing Protocol For Ad Hoc Networks*', **International Journal of Computer Networks and Communications (IJCNC)** Vol. 2 No. 5, **September 2010**
- ✓ **A. Banerjee, P. Dutta**, '*Reputation-based Attack Resistant Cooperation Stimulation (RACS) for Mobile Ad Hoc Networks*', **International Journal of Artificial Intelligence and Applications**, Vol. 1 Vo. 3, **2010**
- ✓ **A. Banerjee, P. Dutta**, '*Fuzzy Controlled Route Discovery For Mobile Ad Hoc Networks*', **International Journal of Engineering, Science and Technology**, Vol. 2 No. 6, pp. 2337-2346, **June 2010**.
- ✓ **A. Banerjee, P. Dutta**, '*Fuzzy Controlled Adaptive and Intelligent Route (FAIR) Selection in Mobile Ad Hoc Networks*', **European Journal of Scientific Research**, Vol. 45 No. 3, **September 2010**
- ✓ **A. Banerjee, P. Dutta**, '*Fuzzy Controlled Localized Route-Repair (FLRR) for On-demand Routing Protocols in Ad Hoc Networks*', **International Journal of Computer Applications**, Vol. 7, No. 6, pp. 1169-1444, **September 2010**
- ✓ **A. Banerjee, P. Dutta**, '*Link Stability and Node Energy Conscious Local Route-Repair Scheme for Mobile Ad Hoc Networks*', **American Journal of Applied Sciences**, Vol. 7(8), pp. 1129-1138, **2010**
- ✓ **A. Banerjee, P. Dutta**, '*A Survey of Unicast Routing Protocols in Ad Hoc Networks*', **International Journal of Advances in Science and Technology**, Vol. 1 No. 3, **2010**
- ✓ **S. De, S. Bhattacharyya and P. Dutta**, '*Efficient Gray Level Image Segmentation Using An Optimized MUSIG (OptiMUSIG) Activation Function*', **International Journal of Parallel, Emergent and Distributed Systems** pp. 1-39, **2010**, <http://dx.doi.org/10.1080/17445760903546618>.
- ✓ **K. Dasgupta, S. Bhattacharyya and P. Dutta**, '*Three-Dimensional Object Extraction Using A Three-Dimensional Self-Organizing Neural Network*

- (3DSONN) and its Two-Dimensional Counterpart: A Comparative Study”, **HETC Journal of Computer Engineering and Applications**, 2010.
- ✓ **S. Bhattacharyya, U. Maulik and P. Dutta**, ‘Multilevel image segmentation with adaptive image context based thresholding’, **Applied Soft Computing**, vol. 11, No. 1, pp. 946-962, 2011.
  - ✓ **A. Banerjee and P. Dutta**, “Limited Area Route Discovery For Mobile Ad Hoc Networks”, **Journal Of Scientific And Industrial Research**, vol. 70, No. 4, pp. 264 – 269, 2011.
  - ✓ **A. Banerjee and P. Dutta**, “An Efficient Method for Tracking Nodes (EMTN) in Mobile Adhoc Networks”, **International Journal of Advances in Science and Technology**, vol. 2, No. 3, 2011.
  - ✓ **D. Mukhopadhyay, S. Dinda and P. Dutta**, “Designing and Implementation of Quantum Cellular Automata 2:1 Multiplexer Circuit”, **International Journal of Computer Applications**, vol. 25, No. 1, 2011.
  - ✓ **J. P. Singh and P. Dutta**, ‘Temporal modeling of link characteristic in mobile ad hoc network’, **International Journal of Computing and Information Technology**, vol. 18, No. 3, pp. 143 – 154, 2011..
  - ✓ **J. P. Singh and P. Dutta**, ‘The Temporal Effect of Mobility on Path Length in MANET’, **International Journal of Wireless Information Networks**, vol. 19, No. 1, pp. 38 – 48, **Springer**, 2012, DOI: 10.1007/s10776-011-0163-z
  - ✓ **A. Banerjee and P. Dutta**, “Fuzzy controlled multi-hop adaptive clustering (FMAC) mobile ad hoc networks”, **Scientific Research and Essays**, vol. 7, No. 2, pp. 114 – 127, 2012.
  - ✓ **S. Dasgupta and P. Dutta**, “An Energy Efficient Genetic Approach for Clustering of Wireless Sensor Network”, **International Journal of Information Engineering** vol. 2, Issue. 2, pp. 54 - 58, 2012.
  - ✓ **K. Dasgupta, J. K. Mandal, P. Dutta**, “Hash Based Least Significant Bit technique for Video Steganography (HLSB)”, **International Journal of Security, Privacy and Trust Management (IJSPTM)**, ISSN 2277-5498, Academy & Industry Research Collaboration Center (AIRCC), pp 1-11, **April 2012** DOI: 10.5151/ijsptm.2012.2201.
  - ✓ **K. Mondal, P. Dutta and S. Bhattacharyya**, ‘Fuzzy Logic Based Gray Image Extraction and Segmentation’, **International Journal of Scientific and Engineering Research**, vol. 3, No. 4, pp. 1 – 14, 2012.
  - ✓ **S. Bhattacharyya, U. Maulik and P. Dutta**, “A Parallel Bi-Directional Self Organizing Neural Network (PBDSONN) Architecture For Color Image Extraction and Segmentation”, **Neurocomputing**, vol. 86, pp. 1 – 23, 2012.
  - ✓ **S. Dasgupta and P. Dutta**, “An Energy Efficient Genetic Approach for Clustering of Wireless Sensor Network,” **International Journal of Information Engineering (IJIE)**, Vol. 2, No. 2, pp. 54-58, 2012.
  - ✓ **V. K. Ojha, P. Dutta, and H. Saha**, “Performance Analysis Of Neuro Genetic Algorithm Applied On Detecting Proportion Of Components In Manhole Gas Mixture”, **International Journal of Artificial Intelligence & Application**, vol. 3, No. 4, pp. 83-98. 2012. DOI : 10.5121/IJAIA.2012.3406

- ✓ **S. Dasgupta and P. Dutta**, “A Democratic Head Election Strategy for Clustering in Wireless Sensor Network”, **International Journal of Computer Applications** (0975 – 8887) vol. 54, No.16, pp. 32 – 36, **2012**.
- ✓ **V. K. Ojha and P. Dutta**, “Performance Analysis of Neuro Swarm Optimization Algorithm Applied on Detecting Proportion of Components in Manhole Gas Mixture”, **Artificial Intelligence Research**, vol. 1, pp. 31 – 46, **2012**. DOI: 10.5430/JNEP.V1N1PX.
- ✓ **D. Mukhopadhyay and P. Dutta**, “Quantum Cellular Automata Based Novel Unit Reversible Multiplexer” **Advanced Science Letters**, vol. 5, pp. 1 - 6, **2012**.
- ✓ **D. Mukhopadhyay and P. Dutta**, “Quantum Cellular Automata Based Novel Unit 2:1 Multiplexer”, **International Journal of Computer Applications**, vol. 43, No. 2, pp. 22-25, **2012**.
- ✓ **A. Banerjee, P. Dutta and S. Ghosh**, “Fuzzy Controlled Energy Efficient Routing Protocol (FE<sup>2</sup>RP) for Mobile Ad Hoc Networks”, **International Journal of Computer Applications**, vol. 61, No. 7, **2013**.
- ✓ **S. Dasgupta and P. Dutta**, “A Novel Game Theoretic Approach for Cluster Head Selection in Wireless Sensor Network”, **International Journal of Innovative Technology and Exploring Engineering**, vol. 2, No. 3, pp. 40-43, February **2013**.
- ✓ **S. Dasgupta and P. Dutta**, “CIAC: Cluster Head Induced Affinity based Clustering for prolonging the Lifetime of Wireless Sensor Network”, **International Journal of Computer Application**, vol. 75, No. 10, pp. 18-23, August **2013**.
- ✓ **A. Banerjee, P. Dutta and S. Ghosh**, “Experience Based Energy efficient Reactive Routing Protocol (EXERP) for Mobile Ad-hoc Networks”, **Arabian Journal for Science and Engineering**, Springer, **2013**, ISSN 1319-8025, DOI 10.1007/s13369-013-0813-9
- ✓ **J. Hazra, A. RoyChowdhury and P. Dutta**, “An approach for determining angle of rotation of a gray image using weighted statistical regression”, **International Journal of Scientific and Engineering Research**, vol. 4, issue 8, pp. 1006 – 1013, **2013**.
- ✓ **D. Dutta, P. Dutta, and J. Sil**, “Categorical Feature Reduction Using Multi Objective Genetic Algorithm in Cluster Analysis”, **LNCS Transactions on Computational Science**, Springer, vol. 21, pp. 164 – 189, **2013**.
- ✓ **D. Dutta, P. Dutta, and J. Sil**, “Simultaneous Feature Selection and Clustering with Mixed Features by Multi Objective Genetic Algorithm”, **International Journal on Hybrid Intelligence Systems**, IOS Press, vol. 11, pp. 41 – 54, **2014**.
- ✓ **J. P. Singh and P. Dutta**, ‘Weighted Delay Prediction in Mobile Ad hoc Network using Fuzzy Time Series’, **Egyptian Informatics Journal**, Elsevier, Vol. 15, Issue 2, pp. 105 – 114, **2014**, ISSN: 1110 – 8665
- ✓ **A. Banerjee and P. Dutta**, “Alternative Node Based Energy Depletion and Expected Residual Lifetime Balancing Method for Mobile Ad hoc Networks”, **International Journal of Advanced Networking and Applications**, vol. 5, Issue. 2, pp. 1886 – 1892, **2014**, ISSN: 0975 – 0290
- ✓ **A. Banerjee and P. Dutta**, “Delay Efficient Energy and Velocity Conscious Non-Preemptive Scheduler (DEV – NS) for Mobile Ad hoc Networks”, **International Journal of Advanced Networking and Applications**, vol. 5, Issue. 4, pp. 2002 – 2010, **2014**, ISSN: 0975 – 0290

- ✓ **A. Pal, J. P. Singh and P. Dutta**, “Path length prediction in MANET under AODV routing: Comparative Analysis of ARIMA and MLP Model”, **Egyptian Informatics Journal, Elsevier**, Vol. 16, Issue 1, **2015**, ISSN: 1110 – 8665 (In Press)

#### Invited Papers –

- ✓ **P. Dutta and D. DuttaMajumder**, ‘A comprehensive study on Pattern Classification Problem (with a case study on application of Genetic Algorithms on Point Classification Problem)’, in the Book on Pattern Directed Information Analysis edited by D. DuttaMajumder and B. Chanda, pp. ~174 – 212, **2005**.
- ✓ **P. Dutta**, ‘A theoretical study on measuring performance of binary encodable evolutionary class of algorithms’, in Proceedings of the National Conference on Computing and Communication Systems (Cocosys '09), pp. 15 – 25, **2009**.
- ✓ **P. Dutta and A. Banerjee**, “Fuzzy-controlled Power-aware Multicast Routing (FPMR) For Mobile Ad Hoc Networks”, in Proceedings of the second International Conference on Computer, Communication, Control and Information Technology (C3IT – 2012), *Procedia Technology, Volume 4*, 2012, Pages 38-49, **2012**.

#### Book Chapters –

- ✓ **S. Bhattacharyya and P. Dutta**, (eds. Md. A. Khan and A. Q. Ansari), “Fuzzy logic: concepts, system design and applications to industrial informatics”, in *Handbook of Research on Industrial Informatics and Manufacturing Intelligence: Innovations and Solutions*, Chapter 3, pp. 33 – 71, IGI Global, Hershey PA, USA, **2012**.
- ✓ **P. Dutta, P. Bhattacharya and S. Bhattacharyya**, (eds. Md. A. Khan and A. Q. Ansari), “Evolutionary computing: principles and applications to portfolio optimization”, in *Handbook of Research on Industrial Informatics and Manufacturing Intelligence: Innovations and Solutions*, Chapter 12, pp. 271 – 295, IGI Global, Hershey PA, USA, **2012**.
- ✓ **B. Chakraborty, S. Bhattacharyya and P. Dutta**, (eds. S. K. Pal, A. Petrosino and L. Maddalena), “An unsupervised video shot boundary detection technique using fuzzy entropy estimation of video content”, in *Handbook on Soft Computing for Video Surveillance*, Chapter 9, pp. 237 – 253, Taylor & Francis, CRC Press, **2012**.
- ✓ **V. K. Ojha and P. Dutta**, (eds. S. Bhattacharyya and P. Dutta), “Performance Comparison of Different Intelligent Techniques Applied on Detecting Proportion of Different Component in Manhole Gas Mixture”, in *Handbook of Research on Computational Intelligence for Engineering, Science, and Business*, **IGI Global**, USA, DOI: 10.4018/978-1-4666-2518-1, ISBN13: 9781466625181, ISBN10: 146662518X, EISBN13: 9781466625198. **2012**.
- ✓ **V. K. Ojha and P. Dutta**, “Conjugate Gradient Trained Neural Network for Intelligent Sensing of Manhole Gases to Avoid Human Fatality”, in *Recent Trends in Knowledge Representation and Computational Intelligence*, **IGI Global**, (Accepted).

## Proceedings of Conference/Workshop/Symposium -

- ✓ **P. Dutta, S. Maitra, K. Dutta and D. DuttaMajumder**, '*An Evolutionary algorithm for 0-1 Knapsack problem*', in Proceedings of Recent Trends in Computer Applications in Engineering (ReTCA'96) held in Bhatinda during **March 8-9, 1995**.
- ✓ **P. Dutta and D. DuttaMajumder**, '*Performance Comparison of Two Evolutionary Schemes*', in Proceedings of the 13<sup>th</sup> International Conference on Pattern Recognition (ICPR '96), pp. ~ 659 - 663, **1996**.
- ✓ **P. Dutta and D. DuttaMajumder**, '*Convergence of an Evolutionary Algorithm*', in proceedings of the 4<sup>th</sup> International Conference on Soft Computing (IIZUKA '96), pp. ~ 515 – 518, **1996**.
- ✓ **P. Dutta, S. Maitra and D. DuttaMajumder**, '*Convergence of an evolutionary heuristic and its application to 0-1 KNAPSACK problem*', in Proceedings of the 6<sup>th</sup> National Seminar on Theoretical Computer Science (NSTCS – 6), p. ~ 119, **1996**.
- ✓ **P. Dutta**, '*An Evolutionary heuristic for knowledge base partitioning problem*', in Proceedings of the IEEE International Conference on Evolutionary Computation (ICEC' 97), pp. ~ 657 – 662, held in Indianapolis, **April 14-17, 1997**.
- ✓ **P. Dutta**, '*Problems of estimation of performance parameters of an evolutionary algorithm*', in Proceedings of the 7<sup>th</sup> International Fuzzy System Association World Congress held in Prague during **June 25-29, 1997**.
- ✓ **P. Dutta and D. DuttaMajumder**, '*An improved genetic scheme for 2D point classification problem*', in Proceedings of the 4<sup>th</sup> Joint Conference in Information Sciences, **1998**.
- ✓ **D. P. Mukherjee, P. Dutta and D. Dutta Majumder**, '*Entropy Theoretic Fusion of Multimodal Medical Images*', in Proceedings of the Indian Conference on Vision, Graphics and Image Processing (ICVGIP '98), **1998**.
- ✓ **P. Dutta**, '*Solving Y2K problem: An integrated approach*', accepted for presentation in the Indian Science Congress Association Young Scientists' Award Programme in the Computer Sciences section in the 86<sup>th</sup> Indian Science Congress at Chennai in **January, 1999**.
- ✓ **P. Dutta**, '*Facing the Y2K Challenge*', in Proceedings of the Regional Conference held in the National Institute of Management, Calcutta, **1999**.
- ✓ **K. Paul, P. Dutta, D. RoyChowdhury, P. K. Nandi and P. PalChaudhuri**, '*A VLSI Architecture for On-Line Image Decompression using GF(2<sup>8</sup>) cellular Automata*', in Proceedings of the 12<sup>th</sup> International Conference on VLSI Design held at Goa, India, pp. ~ 532 - 537, held in **January, 1999**.
- ✓ **P. Dutta and D. DuttaMajumder**, '*Performance characteristic of an evolutionary algorithm*', in Proceedings of the 4<sup>th</sup> International Conference on Advances in Pattern Recognition and Digital Techniques (ICAPRDT '99), held in the Indian Statistical Institute, Calcutta during **December 27 – 29, 1999**.
- ✓ **S. Bhattacharyya, P. Dutta and U. Maulik**, '*Multiple Target Tracking Using Self-Organizing Neural Network Based Segmentation Of Optical Flow Field*', in Proceedings of the Conference On Recent Trends In Manufacturing (CARTM '03), pp. ~ 369 – 376 held during **November 14-15, 2003**.

- ✓ **S. Bhattacharyya, P. Dutta and U. Maulik**, '*Multi-Scale Object Extraction Using Self Organizing Neural Network With A Multi-Level Sigmoidal Activation Function*', in Proceedings of the International Conference on Advances in Pattern Recognition (ICAPR '03), pp. ~ 435 – 438 held in **December, 2003**.
- ✓ **P. Dutta, S. Bhattacharyya and K. Dasgupta**, '*Multi-Scale Object Extraction Using Self Organizing Neural Network With A Multi-Level Beta Activation Function*', in Proceedings of IEEE International Conference on Intelligent Sensing and Information Processing (ICISIP '04), pp. ~ 139 – 142 held in Chennai, India in **January, 2004**.
- ✓ **S. Bhattacharyya and P. Dutta**, '*A parallel self-organizing neural network architecture for extraction of graded color objects*', in Proceedings of the International Conference on Recent Trends and New Directions of Research in Cybernetics & Systems Theory (ICCST '04) held in **January, 2004**.
- ✓ **P. Dutta and D. DuttaMajumder**, '*An evolutionary heuristic for 0-1 Knapsack problem*', in Proceedings of the International Conference on Recent Trends and New Directions of Research in Cybernetics & Systems Theory (ICCST '04) held in **January, 2004**.
- ✓ **S. Bhattacharyya, P. Dutta and D. DuttaMajumder**, '*Multiscale object extraction using a self-organizing neural network with multilevel beta activation function and its sigmoidal counterpart: A Comparative study*', in Proceedings of the International Conference on Recent Trends and New Directions of Research in Cybernetics & Systems Theory (ICCST '04) held in **January, 2004**.
- ✓ **A. Banerjee, K. Majumder, P. Dutta and K. Mondal**, '*A birth and death based mathematical model for tracking mobile nodes in a multihop environment*', in Proceedings of the National Conference on IT-Enabled Governance held in Calcutta during **12-13 June, 2004**.
- ✓ **A. Banerjee, K. Majumder, P. Dutta and K. Mondal**, '*Implementation of the behaviour and structure of the multi-hop mobile environment as a pushdown automata and a birth and death based statistical model*', in Proceedings of the National Conference on Mobile Computing and Networking (MobiComNet- '2004) pp. ~ 45 -51 held in the Vellore Institute of Technology during **September 30 - October 02, 2004** (conferred the **Best Paper Award** of the Conference).
- ✓ **S. Bhattacharyya and P. Dutta**, '*Multiscale Object Extraction with MUSIG and MUBET with CONSENT: A Comparative Study*', in Proceedings of the International Conference on Knowledge Based Computer System (KBCS 2004), pp. ~ 100 – 109 held in Hyderabad, India during **December, 2004**.
- ✓ **K. Dasgupta, S. Bhattacharyya and P. Dutta**, '*Pure Color Object Extraction: A Distributed Approach*' in Proceedings of the Asia Pacific Conference on Parallel and Distributed Computing Technologies (ObComAPC '2004), pp. ~ 556 - 565 held in Vellore, India in **December, 2004**.
- ✓ **S. Bhattacharyya and P. Dutta**, '*XMUBET with CONSENT: A Pixel Hostility Induced Multiscale Object Extractor*', in Proceedings of the IEEE International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP '04), pp. ~ 277 – 282 held in Melbourne, Australia in **December, 2004**.
- ✓ **S. Bhattacharyya and P. Dutta**, '*XMUSIG with CONSENT: A Pixel Hostility Induced Multiscale Object Extractor*', in Proceedings of the IEEE International

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