

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. Awards :

- **Life Time Achievements Award, 2018**, *National Award*, Awarding Agency: **IRDP Group of Journals**, 30/05/2018.
- **Distinguished Scientist in Computer Science and Engineering, 2018**, *International Award*, Awarding Agency: **Venus International Foundation**, 11/08/2018.
- **Excellence in Science and Technology Award, 2018**, *International Award*, Awarding Agency: **The Indian Science Congress Association (Govt. of India)**, 03/01/2019.
- **INSA Teacher Award, 2019**, *National Award*, Awarding Agency: **Indian National Science Academy (Govt. of India)**, 16/12/2019 - 18/12/2019 (as announced).

4. 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 and 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**.

5. 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 the 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 the Indian Society of Remote Sensing (since 2012).
- **Life Member** of the Institution of Engineers, India (M 1553881 since 2016) and then **Life Fellow** of the Institution of Engineers, India (F 121919-3 since 2016).
- **Fellow** of the Institution of Engineering and Technology (United Kingdom), 2020.
- **Life Fellow** of Institution of Biomedical Engineers (India) (F-1012 since 2020).

6. 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, IEEE.
 2. IEEE Transactions on Evolutionary Computation, IEEE.
 3. IEEE Transactions on Cybernetics, IEEE.
 4. Pattern Recognition, Elsevier.
 5. Signal Processing, Elsevier.
 6. IEEE Communication Letters, IEEE.
 7. Journal of Phytopathology.
 8. Applied Soft Computing, Elsevier.
 9. Microprocessors and Microsystems, Springer.
 10. Microelectronics, Elsevier.
 11. Microsystem Technologies, Springer.
 12. INAE Letters.
 13. Pattern Recognition Letters, Elsevier.
- **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, 2016, 2017**.
- **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**.
- **Member** of the Departmental Advisory Board of the Department of Computer Science and Engineering of the Narula Institute of 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 <http://www.iccicn.in/> (IC-CICN 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**.
 8. Technical Session in Second IEEE International Conference on Recent Trends in Information Systems (ReTIS 2015), Jadavpur University, West Bengal India, **July 2015**.
 9. Technical Session in International Symposium on Advanced Computing and Communications (ISACC 2015), Assam University, Silchar, Assam India, **September 2015**.
 10. Technical Session in International Conference on IEEE International Conference on Research in Computational Intelligence and Communication Networks <http://www.iccicn.in/> (ICRCICN 2015), Kolkata, India, **November 2015**.
 11. Technical Session in International Conference on IEEE International Conference on Research in Computational Intelligence and Communication Networks <http://www.iccicn.in/> (ICRCICN 2016), Kolkata, India, **November 2016**.
- **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 .
 12. University of North Bengal.
- **External Member** of Doctoral Scrutiny Committee of the Department of Computer Science and Engineering, National Institute of Technology, Patna since **December 2016**.
 - **Member** of Doctoral Research Committee of the Department of Computer and System Sciences, Visva Bharati University since **July 2017**.
 - **Member (Nominee of Vice Chancellor, Maulana Abul Kalam Azad University of Technology, West Bengal)** of Bengal Institute of Engineering and Technology, West Bengal since **July 2017**.

7. 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 “*Intelligent Clustering of Hierarchical Wireless Sensor Network*” 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**.
- Keynote lecture on “*Some study on Energy issues in Quantum Dot Cellular Automata*” in the National Conference on Computing, Communication and Information Processing (NCCCIP-2015) at North Eastern Regional Institute of Science and Technology, Arunachal Pradesh, India on **03/05/2015**.
- Invited lecture on “*Temporal Characterization in Mobile Ad hoc Environment*” in one week Short Term Course on “*Recent Trends in Opportunistic & Social Networks and its Applications*” sponsored by ITRA and Media Lab Asia, Government of India held at Kalyani Government Engineering College in collaboration with NIT, Durgapur, on **30/06/2015**.



- Invited lecture on “*Introduction to Matlab*” in UGC sponsored State level seminar on “*Matlab and its Application in Soft Computing*” held at Serampore Girls’ College, West Bengal on **08/08/2015**.
- Invited lecture in the International Symposium on “*Advanced Computing and Communication (ISACC 2015)*” organized by the Department of Information Technology of Assam University, Silchar held at Assam University, Silchar on **14/09/2015**.
- Invited lecture entitled “*Neural Network*” in the Faculty Development Programme on “*Computational Intelligence for Optimization Problems*” on **30/03/2016** organized by the Calcutta Business School during **28/03/2016 to 01/04/2016**.
- Invited lecture in the TEQIP – II sponsored One week Faculty Development Programme on “*Pedagogy and Research Methodology*” organized by and at the RCC Institute of Information Technology, Kolkata held during **01/08/2016 to 05/08/2016**.
- Invited lecture in the TEQIP – II sponsored International Workshop on “*Computational Science and Technology*” organized by and at the Department of Computer Science and Engineering of College of Engineering and Management, Kolaghat held during **16/07/2016 to 18/07/2016**.
- Invited lecture in the TEQIP – II sponsored National Level Orientation and Faculty Development Programme on “*Hybrid Intelligence*” organized by and at the Department of Information Technology of RCC Institute of Information Technology, Kolkata held during **18/01/2016 to 22/01/2016**.
- Invited lecture in the TEQIP – II sponsored Three days’ Workshop on “*Big Data and Cloud Computing*” organized by and at the Department of Computer Science and Engineering of College of Engineering and Management, Kolaghat held during **24/09/2016 to 26/09/2016**.
- Invited lecture in the TEQIP – II sponsored Workshop on “*Research Methodology and LATEX*” organized by and at the Department of Computer Science and Engineering of Narula Institute of Technology, Kolkata during **24/10/2016 to 28/10/2016**.
- Invited lecture in the International Seminar on “*Emerging Trends in Information Science and Technology (ISETIST 2017)*” organized by the Department of Computer and Information Science of Raigunj University on **13/01/2017**.
- Invited lecture in the TEQIP – II sponsored Short Term Course on “*Expert Systems and Machine Intelligence Techniques- Applications to Electrical, Electronics and Communication Engineering (ESMIT 2017)*” organized by and at the Department of Electrical Engineering of College of Engineering and Management, Kolaghat held during **24/01/2017 to 29/01/2017**.
- Invited lecture in the TEQIP – II sponsored National Level Orientation and Faculty Development Programme on “*LaTeX: The Art of Technical Writing*” organized by and at the Department of Information Technology of RCC Institute of Information Technology, Kolkata held during **06/02/2017 to 10/02/2017**.
- Invited lecture in the Two days’ Workshop on “*Scientific Document Writing using LaTeX*” organized jointly by the Department of Computer Science of Aliah University, Kolkata and the Computer Society of India, Kolkata Chapter, at the Department of Computer Science of Aliah University, Kolkata during **11/02/2017 to 12/02/2017**.

- Invited lecture entitled “Selected Topics of Artificial Neural Network” in the one day National Symposium on “*Recent Trend of Computational Intelligence*” organized jointly by the Department of Computer Science of University of Gour Banga, Malda, West Bengal in Technical Collaboration with the IEEE Computational Intelligence Society, Kolkata Chapter on **15/06/2017**.
- Invited lecture entitled “*Artificial Neural Network*” in the Five days’ Faculty Development Programme organized jointly by the Brainware University, Kolkata and Beainware Engineering College, Kolkata at the Brainware University, Kolkata on **12/07/2017**.
- Invited lecture entitled “*Hybrid Intelligent Techniques*” on **17/07/2017** in the Two weeks’ Faculty Development Programme on “*Hybrid Computational Intelligence*” organized by and at the Department of Information Technology of RCC Institute of Information Technology, Kolkata under the aegis of Electronics and ICT Academy, National Institute of Technology, Patna held during **17/07/2017 to 27/07/2017**.
- Invited lecture entitled “*Hybrid Intelligence*” on **08/08/2017** in the One day Symposium on “*Computational Intelligence: Theories, Applications and Future Aspects*” organized and at the Department of Computer Science and Engineering of Assam University, Silchar held on **08/08/2017**.
- Invited lecture entitled “*Image Registration*” in the Two days Seminar on “*Image Processing and Pattern Recognition*” during **09/09/2017 to 10/09/2017** organized by the Department of Information Technology of Siliguri Institute of Technology, West Bengal, India on **10/09/2017**.
- Invited lecture entitled “*Energy Characteristics of Quantum Dot Cellular Automata based Circuits*” in the One day Seminar on “*Quantum Computers – The Future of Computing (QCFC 2017)*” organized by the Department of Computer Science and Engineering of Techno India - Batanagar, West Bengal, India on **16/09/2017**.
- Invited lecture entitled “*Introduction to Machine Learning*” in the Two days Seminar on “*Machine Learning*” during 10/11/2017 to 11/11/2017 organized by the Department of Computer Science and Engineering of Siliguri Institute of Technology, West Bengal, India on **10/11/2017**.
- Invited lecture entitled “*Soft computing techniques for cloud computing*” in the Four days Workshop on “*International Workshop on New Innovations in Cloud and Fog Computing*” during 04/05/2018 to 07/05/2018, under TEQIP III, organized by Department of Computer Science and Engineering, Maulana Abul Kalam Azad University of Technology (West Bengal University of Technology), West Bengal, India on **07/05/2018**.
- Invited lecture entitled “*Recent Trends in Intelligent Systems Design (RTISD 2019)*” during 08/01/2019 to 12/01/2019, under TEQIP III, organized by the Department of Electrical Engineering, NIT Durgapur, West Bengal, India on **10/01/2019**.
- Invited lecture entitled “*Machine Intelligence for Big Data Challenges*”, during 08/07/2019 to 12/07/2019 at Siliguri Institute of Technology, West Bengal, India on **11/07/2019**.
- Invited lecture entitled “*Machine Intelligence for Big Data Challenges*”, during 15/07/2019 to 19/07/2019, organized by the Department of Information Technology, RCC Institute of Information Technology, Kolkata, West Bengal, India on **18/07/2019**.



- Invited lecture entitled "*Handling images and tables on LaTeX*", during 22/07/2019 to 26/07/2019 organized by the Department of Information Technology, RCC Institute of Information Technology, Kolkata, West Bengal, India on **24/07/2019**.
- Invited lecture entitled "*Machine learning and cloud computing*", during 06/08/2019 to 08/08/2019 organized by the Department of Applied Electronics & Instrumentation Engineering, RCC Institute of Information Technology, Kolkata, West Bengal, India on **07/08/2019**.

8. Employment Record:

- 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**.
- 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**.
- 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**.
- Associated to Apt Software Avenues Private Limited from **01/09/1997** to **01/12/1997**.
- Served as **Computer Consultant** in the project on Banking Network Programming in the Network Computer House, Bologna, Italy from **September 1997** to **November 1997**.
- 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 **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 next assignment.
- 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 (textbfMarch 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 form 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 **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**.
 - Engaged at present as **Professor** in the Department of Computer & System Sciences of Visva Bharati University, Santiniketan, West Bengal, India from **01/11/2007** till date.

9. 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.

10. List of Short Term Course(s)/Programmes:

- 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**.
- Coordinated Self financed Three days’ workshop on “*LATEX: The Ultimate in Technical Report Writing*” organized jointly by the Department of Computer Science and Engineering and A. K. Chaudhury School of Information Technology of the University of Calcutta in technical collaboration with the ACM Professional Chapter, Kolkata during **25 – 27 March 2016**.
- Coordinated **Self financed** One day workshop on “*Technical Content Writing using LaTeX*” organized by the Department of Information Technology and Systems of the Calcutta Business School in technical collaboration with the Computer Society of India, Kolkata Chapter on **29/05/2016**.

11. 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 Vidyapeeth, 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**.

12. 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, 2015, 2016, 2017**.
- Undertook teaching assignment as a **Guest Faculty** in the Department of Computer Science and Engineering, National Institute of Technology, Arunachal Pradesh in **2013**.
- Undertook teaching assignment as a **Guest Faculty** in the 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 in **2015, 2016**.
- Undertook teaching assignment as a **Guest Faculty** organized by the Ph.D. Cell of the Maulana Abul Kalam Azad University of Technology, West Bengal in **2016**.

13. 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.

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.

14. 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 in 2013)**
- 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 in 2013)**
- Supervised **Dr. Jyoti Prakash Singh** for his Ph.D. entitled *'Temporal Characterization in Mobile Ad Hoc Network Environment'*, registered as a part time scholar with A. K. Choudhury School of Information Technology of the University of Calcutta with effect from 25.04.2015 vide Intimation No. 2774/PhD dated 28.04.2015. **(Degree awarded in 2015)**

2015) [Jointly supervised with Prof. (Dr.) Amlan Chakraborty, A. K. Chaudhury School of Information Technology, University of Calcutta, West Bengal, India]

- Supervised **Dr. Kousik Dasgupta** for his Ph.D. entitled “*Design and Implementation of Steganographic Engine for Secret Data Sharing and Authentication of Videos: An Over-ture*”, 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. (**Degree awarded in 2017**) [Jointly supervised with Prof. (Dr.) J. K. Mandal, Department of Computer Science and Engineering, University of Kalyani, West Bengal, India]
- Supervised **Dr. Debarka Mukhopadhyay** for his Ph.D. registered “*Study on Quantum-Dot Cellular Automata Based Circuit Design, Testing and Analysis*” as a part time scholar of the Department of Computer Science and Engineering of the Maulana Abul Kalam Azad University of Technology, West Bengal with effect from 17.07.2013 bearing No. PhD/Tech/CSEIT016/2013. (**Degree awarded in 2017**).
- Supervised **Dr. Varun Kumar Ojha** for his Ph.D. enrolled “*DESIGN OF AN INTELLIGENT SYSTEM FOR DETECTION OF MANHOLE GASES TO AVOID HUMAN FATALITY*” as a part time scholar of the Department of Computer Science and Engineering of the Jadavpur University, Kolkata with effect from 07.01.2013 vide notification No. D-7/E/15/13 dated 3.01.2013. (**Degree awarded in January 2018**) [Jointly supervised with Prof. (Dr.) Atal Chaudhuri, Department of Computer Science and Engineering, Jadavpur University, West Bengal, India]
- Supervised **Dr. Kakali Datta** for her Ph.D. entitled “*Some studies on the performance of Quantum Cellular Automata based circuits*”, registered as a part time scholar of the Department of Computer & System Sciences of Visva Bharati University vide Notification No. VB-1604 of 2010-11 with effect from 27.09.2010. (**Degree awarded in August 2018**).
- Supervised **Dr. Dipankar Dutta** for his Ph.D. entitled “*Supervised Classification to Unsupervised Clustering: A Genetic Paradigms*” enrolled as a part time scholar with the Department of Computer Science and Technology of Indian Institute of Engineering Science and Technology, Shibpur with effect from 01.07.2011 vide notification No. 132011E2 dated 13.07.2011. Dr. Dutta is registered vide No. PhD/R/2012/0029 dated 25.07.2012. (**Degree awarded in October 2019**). [Jointly supervised with Prof. (Dr.) Jaya Sil, Department of Computer Science and Technolog, Indian Institute of Engineering Science and Technology, Shibpur, West Bengal, India]
- Supervised **Dr. Mili Ghosh** for her Ph.D. entitled “*Some studies and Analysis of 2 Dot 1 Electron Quantum Dot Cellular Automata Circuits*”, registered as a full time scholar (DST INSPIRE Fellow) of the Department of Computer & System Sciences of Visva Bharati vide Notification No. Aca/G/R-6.7/188/2015-2016 dated 08.06.2015 with effect from 28.11.2013.
- Supervised **Dr. Sudakshina Dasgupta** for her Ph.D. registered entitled “*Energy Aware Intelligent Clustering of Hierarchical Wireless Sensor Network*” as a part time scholar of the Department of Computer Science and Engineering of the Maulana Abul Kalam Azad University of Technology, West Bengal with effect from 29.01.2015 bearing No. PhD/Tech/CSEIT013/2015.

Registered and Thesis yet to be submitted :

- Supervising **Mr. Avishek Nandi** for his Ph.D. entitled as "*Some Studies on Reversible Neural Network*", registered as a full time scholar (NET-JRF Fellow 2017-2022) at the Department of Computer & System Sciences of Visva-Bharati bearing Registration No. VB-1348 of 2012-13 with effect from 28.08.2015.
- Supervising **Mr. Md Nasir** for his Ph.D. entitled as "*Recognition of change of human emotion from face image sequence*", registered as a full time scholar (DST INSPIRE Fellow) with the Department of Computer & System Sciences of Visva-Bharati bearing Registration No. VB-312 of 2010-11 with effect from 22.07.2016.
- Supervising **Mr. Arindrajit Pal** for his Ph.D. registered entitled "*Temporal Characterization of mobile Ad-hoc Network in multivariate framework*" as a part time scholar of the Department of Computer Science and Engineering of the Calcutta University, West Bengal with effect from 12.02.2018 bearing Registration No. 090-1111-0017-17.
- Supervising **Mr. Abu Sufian** for his Ph.D. entitled as "*Performance Enhancement in Mobile Ad-hoc Network using Fuzzy Control*", registered as a part time scholar at the Department of Computer & System Sciences of Visva-Bharati bearing Registration No. VB-1029 of 2017-18 with effect from 29.07.2017.
- Supervising **Mr. Arindam Karmakar** for his Ph.D. entitled as "*Detection of mixed response from human face expressions*", registered as a full time scholar at the Department of Computer & System Sciences of Visva-Bharati bearing Registration No. VB-1200 of 2018-19 with effect from 20.08.2018.[Jointly supervising with Dr. Kakali Datta , Department of Computer & System Sciences, Visva-Bharati, West Bengal, India]
- Supervising **Mr. Ajaharul Hoque** for his Ph.D. entitled as "*Large-Scale multidimensional Social-Network-Sourced data analytics: An intelligent approach*", registered as a part time scholar at the Department of Computer & System Sciences of Visva-Bharati bearing Registration No. VB-1199 of 2018-19 with effect from 20.08.2018.

15. List of Patents:

Filed(Publication pending):

- **S. Bhattacharyya, S. S. Mukherjee, P. Dutta and S. Chakraborty**, "*Low Cost Intelligent Colorimeter Using Color LEDs*", Indian Patent No. 886/KOL/2015 dated 14/08/2015.

Published:

- **S. Bhattacharyya, S. S. Mukherjee, P. Dutta, S. Chakraborty, B. Roy, B. Chakraborty, I. Pan, H. Bhaumik and A. Mukherjee**, "*A LED based Colorimeter Device*", International Patent No. PCT/IN2016/000206 dated 11/08/2016, International Publication No.: WO 2017/029681 A1, International Publication Date: 23/02/2017.
- **S. Roy, P. Dutta, D. Mukhopadhyay and S. Bhattacharyya**, "*A portable molecular quantum dot cellular automata X-Ray system and Method of its operation thereof*", Indian Patent No. 201631033793 dated 03/10/2016. Publication Number: 201631033793 Publication Date: 24/03/2017.



- **S. Roy, P. Dutta, D. Mukhopadhyay and S. Mondal**, “*Quantum Dot Cellular Automata based Portable Cancer Cell Demolition System and Method of its operation thereof*”, Indian Patent No. 201631041316 dated 02/12/2016, Publication Number: 201631041316 Publication Date: 07/04/2017.
- **S. Roy, P. Dutta, D. Mukhopadhyay and M. Ghosh**, “*Quantum Dot Cellular Automata based Food Irradiation System and Method of its working*”, Indian Patent No. 201631045060 dated 30/12/2016, Publication Number: 201631045060 Publication Date: 07/04/2017.
- **S. Roy, P. Dutta, D. Mukhopadhyay and K. Datta**, “*Quantum Dot Cellular Automata based Radiation Knife for Radiosurgery and Method of its working*”, Indian Patent No. 201631045061 dated 30/12/2016, Publication Date: 07/04/2017.
- **S. Roy, P. Dutta and D. Mukhopadhyay**, “*Quantum Dot Cellular Automata based Portable Industrial Radiography System*”, Indian Patent No. 201731000500 dated 05/01/2017, Publication Date: 07/04/2017.
- **S. Roy, P. Dutta, D. Mukhopadhyay and S. Bhattacharyya**, “*A Portable X-RAY System Based on the Molecular Quantum Dot Cellular Automata (QCA)*”, PCT Application No. PCT/IB2017/050329 dated 23/01/2017, International publication no WO/2018/065828, International publication date: 12/04/2018 .
- **S. Roy, P. Dutta, D. Mukhopadhyay and S. Mondal**, “*Quantum Dot Cellular Automata based Portable Cancer Cell Demolition System and Method of its operation thereof*”, PCT Application No. PCT/IB2017/050622 dated 04/02/2017, International publication No WO/2018/100438, International publication date: 07/06/2018.
- **P. Dutta, D. Mukhopadhyay and S. Bhattacharyya**, “*A Molecular QCA based Bug Zapper System*”, Indian Patent No. 201731011403 dated 30/09/2017, Publication Date 15/06/2018.
- **P. Dutta, D. Mukhopadhyay, S. Bhattacharyya and P. Bhattacharyya**, “*A Molecular QCA based CT Scan System*”, Indian Patent No. 201731011402 dated 30/09/2017, Publication date 15/06/2018.
- **Paramartha Dutta, Debarka Mukhopadhyay, Siddhartha Bhattacharyya**, “*Molecular QCA based Ultraviolet ray generating unit for light Therapy*”, IPO Number with Filing date 201731011398; 30/09/2017. Date of publication 15/06/2018.
- **P. Dutta, D. Mukhopadhyay and S. Bhattacharyya**, “*A Molecular QCA based UV Lamp for Water Purification*”, Indian Patent No. 201731011405 dated 30/09/2017. Date of publication 15/06/2018.
- **S. Roy, P. Dutta, D. Mukhopadhyay and M. Ghosh**, “*Quantum Dot Cellular Automata based Portable Food Irradiation System and Method of its working*”, PCT Application No. PCT/IB2017/050660 dated 08/02/2017, International Publication No WO/2018/122622, International publication date: 05/07/2018.
- **S. Roy, P. Dutta, D. Mukhopadhyay and K. Datta**, “*Quantum Dot Cellular Automata based Radiation Knife for Radiosurgery and Method of its working*”, PCT Application No. PCT/IB2017/051596 dated 20/03/2017, International Publication No WO/2018/122624, International publication date: 05/07/2018.

- **S. Roy, P. Dutta and D. Mukhopadhyay**, “Quantum Dot Cellular Automata based Portable Industrial Radiography System”, PCT Application No. PCT/IB2017/051624 dated 21/03/2017, International Publication No WO/2018/127742, International publication date: 12/07/2018.
- **Anuradha Banerjee, Paramartha Dutta and Abu Sufian**, “Design of An Energy Efficient Low Radiation HELLO Devoid Mobile Device”, Indian Patent (Filed vide no. 201831042449), 12/11/2018, Publication date 14/12/2018.

16. 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, DOI: [https://doi.org/10.1016/S0895-7177\(98\)00036-3](https://doi.org/10.1016/S0895-7177(98)00036-3), **1998**. [SCOPUS indexed]
- **S. Bhattacharyya and P. Dutta**, “Designing pruned neighborhood neural networks for object extraction from noisy background”, **Foundation of Computing and Decision Sciences**, Vol. 31, No. 2, pp. 105 - 134 **2006**. [SCOPUS indexed]
- **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 and Information Engineering**, Vol. 1, No. 8, pp. 2446 – 2458, **2007**. [SCOPUS indexed]
- **S. Bhattacharyya, P. Dutta and U. Maulik**, “Binary object extraction using bi-directional self-organizing neural network (BDSONN) architecture with fuzzy context sensitive thresholding”, **Pattern Analysis and Applications**, Vol. 10, No. 4, pp. 345 – 360, DOI: <https://doi.org/10.1007/s10044-007-0072-z>, **2007**. [SCI indexed]
- **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 Computer, Electrical, Automation, Control and Information Engineering**, Vol. 2, No. 4, pp. 1309 – 1329, **2008**.
- **S. Bhattacharyya, P. Dutta and U. Maulik**, “Self Organizing Neural Network (SONN) Based Gray Scale Object Extarctor with a Multilevel Sigmoidal (MUSIG) Activation Functions”, **Foundation of Computing and Decision Sciences**, Vol. 33, No. 2, pp. 131 – 165, **2008**. [SCOPUS indexed]
- **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**. [SCOPUS indexed]
- **S. Roychoudhury and P. Dutta**, “Birth and death modeling of mobility uncertainty in mobile ad-hoc network”, **International Journal on Computer Science and Applications**, vol.1(3), **2008**. [SCOPUS indexed]

- **S. Roychoudhury and P. Dutta**, “*Statistical Modeling of Mobility of Nodes in a Mobile Ad-hoc Network (MANET) using β Distribution*”, **IAENG Engineering Letters**, **2008**. [SCOPUS/ESCI indexed]
- **A. Banerjee and P. Dutta**, “*Fuzzy Controlled Adaptive Geocasting in Mobile Ad-hoc Network*”, **International Journal of Intelligent Techniques**, Vol. 14, No. 2, pp. 109 - 131, **2008**.
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