

Curriculum Vitae

1. **Name in Full:** SUBHADIP BASU
2. **Present Designation:** Professor
3. **Department:** Computer Science and Engineering
4. **Organization:** Jadavpur University
Kolkata-700032, India.
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5. **Email:** subhadip.basu@jadavpuruniversity.in, b.subhadip@gmail.com
6. **Residential Address :** 87/46/1, A.K. Mukherjee Road
Kolkata-700090, India.
Phone No.: +91-33-25310928
Mobile No.: +91-9674 354573
7. **Date of Birth:** 8th September 1976
8. **Sex:** Male
9. **Academic Qualifications:**

| Name of Examination / Degree | Name of School/College /Board/ Council/University | Year of Passing | Division / Class | Marks (%) |
|------------------------------------------------------|---------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------|-----------|
| Madhyamik (10 th Standard) | Ramakrishna Mission Vidyapith, Purulia, W.B.B.S.E | 1993 | (Ranked 24 th among ~500,000 students) | 90.1 |
| Higher Secondary | St. Xavier's College, Calcutta, W.B.C.H.S.E | 1995 | I | 73.4 |
| Bachelor of Engineering (Computer Sc. & Engineering) | Jawaharlal Nehru National College of Engineering, Kuvempu University, Karnataka | 1999 | 1 st Class with Distinction | 76.5 |
| Ph.D. (Engineering) | Jadavpur University, Kolkata | 2006 | Thesis Title: "Development of OCR Technique for handwritten Bangla Text" | |

10. Experience Profile:

| | Name of Employer | Designation | Period | |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------|-----------|-----------|
| | | | From | To |
| Academic | Jadavpur University, Kolkata, India | Professor | July 2017 | Till date |
| | | Associate Professor | July 2014 | July 2017 |
| | | Assistant Professor | July 2006 | July 2014 |
| | MCKV Institute of Engineering, Howrah, India | Lecturer | Feb. 2002 | July 2006 |
| | Institute of Engineering & Management, Kolkata, India | Lecturer | July 2000 | Nov. 2000 |
| | Gandhi Institute of Engineering & Technology, Orissa, India | Lecturer | Dec. 1999 | June 2000 |
| Industrial | R S Software (I) Ltd., Kolkata, India | Associate Software Engineer | Dec. 2000 | Dec. 2001 |
| Post-doctoral Research and Visiting Positions | Hitachi Central Research Laboratory, Tokyo, Japan | Visiting Researcher | Aug. 2007 | Nov. 2007 |
| | Interdisciplinary Centre for Mathematical and Computational Modelling, University of Warsaw, Poland | Visiting Researcher | June 2009 | Aug. 2009 |
| | | Post-doctoral Researcher | Oct. 2012 | Dec. 2012 |
| | | | June 2013 | Aug. 2013 |

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|--------------------------|--------------------------------------------------------------------------------|-----------------------------|-----------|-----------|
| | | | June 2014 | Aug. 2014 |
| | Department of Electrical and Computer Engineering, The University of Iowa, USA | Post-doctoral Researcher | June 2010 | June 2011 |
| | | Visiting Scientist | Oct. 2015 | Nov. 2015 |
| | School of Computing, Bournemouth University, UK | Visiting Researcher | June 2015 | July 2015 |
| | LORIA, University of Lorraine, Nancy, France | Visiting Professor | May 2016 | June 2016 |
| | Nencki Institute of Experimental Biology, Warsaw, Poland | Visiting Scientist | July 2017 | Aug. 2017 |
| | Hannover Medical School, Germany | Visiting Scientist | May 2018 | June 2018 |
| Adjunct Positions | Department of Electrical and Computer Engineering, The University of Iowa, USA | Honorary Research Scientist | Dec. 2016 | Till date |

11. Contribution to Teaching:

| | Theoretical | Sessional / Practical |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Subject / Paper taught in Under Graduate Level | Computer Graphics, Image Processing, Principles of Programming Languages, Introduction to computing, Computer Programming & Numerical Methods, Embedded Systems | Computer Graphics, Introduction to computing, Computer Programming & Numerical Methods, Data Structure |
| Subject / Paper taught in Post Graduate Level | Pattern Recognition and Image Processing, Computer Graphics and Multimedia, Bioinformatics | Computer Graphics, Data Structure |

12. Contribution to Research:

A. Publications: (Annexure – A)

- Major Journal Publications: **47 (SCI/Scopus/UGC indexed)**
- Other Refereed Journals (with ISSN): **13**
- List of edited volumes/books published: **7**
- List of chapters contributed in edited volumes: **5**
- List of papers published in National/International Conferences: **116**

B. Invited Talks Delivered: (Annexure – B)

- International: 13
- National: 23

C. Research Guidance towards Ph.D. (Engineering):

Awarded:

1. Dr. Nibaran Das: “A soft computing approach towards recognition of handwritten Bangla characters”, Co-supervisor: Prof. Mahantapas Kundu, JU. AWARDED in Oct. 2012.
2. Dr. Ram Sarkar: “Development of line extraction and segmentation techniques for unconstrained handwritten Bangla documents”, Co-supervisor: Prof. Mahantapas Kundu, JU. AWARDED in Dec. 2012.
3. Dr. Ayatullah Faruk Mollah: “Development of some camera based document processing techniques for mobile devices”, Co-supervisor: Prof. Mita Nasipuri, JU. AWARDED in Nov. 2013.
4. Dr. Satadal Saha: “Development of some techniques for automatic localization and interpretation of vehicle license plates”. Co-supervisor: Prof. Mita Nasipuri, JU. AWARDED in 2014.
5. Dr. Sandip Rakshit: “A study on handwritten document management system”. Co-supervisor: Prof. Kalyan Sankar Sengupta, IISWBM. AWARDED in 2014.
6. Mr. Brijesh Sriwastava: “Analysis of protein-protein interactions using computational approaches”, registered in Jadavpur University in March 2012. Co-supervisor: Prof. Ujjwal Maulik, JU. AWARDED in 2017.

Registered/Submitted:

1. Ms. Pranati Rakshit: “Some studies on hemodynamic modelling in human cerebral vasculature”, registered in Jadavpur University in October 2013. Co-supervisor: Prof. Mita Nasipuri, JU. *Submitted*
2. Ms. Soumi Paul: “Some studies on automatic analysis of human motions from video sequences”, registered in Jadavpur University in June 2014. Co-supervisor: Prof. Mita Nasipuri, JU.

3. Mr. Bidhan Barai: "Development of some techniques for text-independent speaker recognition from audio signals", registered in Jadavpur University in August 2015. Co-supervisor: Dr. Nibaran Das, JU.
4. Mr. Sovan Saha: "Some studies on analysis of protein-protein interaction networks", registered in Jadavpur University in November 2015. Co-supervisor: Dr. Piyali Chatterjee, Netaji Subhash Engineering College. *Submitted*
5. Mr. Anup Kumar Halder: "Human Protein Cluster Analysis", registered in Jadavpur University in December 2015.
6. Mr. Nirmal Das: "Advancement of Multiscale Opening Algorithm using Focallness and other Novel Techniques", registered in Jadavpur University in August 2017.

D. Academic Projects (Ongoing):

| Project Title | Role | Funding Agency | Amount | Duration | Period |
|-------------------------------------------------------------------------------------------------------|------------------------|-------------------------------|----------------|----------|---------|
| Development of some analytical tools for analysis of large-scale protein-protein interaction networks | Principal Investigator | DBT, Govt. of India | Rs.48,22,125/- | 3 Years | 2017-20 |
| Multi-lingual Text Analytics for Camera-based Handheld Devices | Co-Investigator | DST, SERB, Govt. of India | Rs.25,96,440/- | 3 years | 2017-20 |
| Design of a Multimodal Biometric System for Various Security and Forensic applications (Phase-II) | Principal Investigator | UPE-II, UGC, Govt. of India | Rs.13,70,000 | 3 Years | 2015-19 |
| Multispectral Image Analysis for Various Security and Medical Applications | Co-Investigator | PURSE-II, DST, Govt. of India | Rs.37,00,000 | 3 Years | 2015-19 |

Completed:

| Project Title | Role | Funding Agency | Amount | Duration | Period |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------|--------------------------------------------|----------|---------|
| Development of a new morphological operator for multi-scale opening of conjoined objects | Principal Investigator (Research Award) | UGC, Govt. of India | Rs.3,00,000/- (excluding salary component) | 2 Years | 2016-18 |
| Segmentation of the carotid vasculature in human CT angiography | Principal Investigator | DST, Govt. of India | Rs.8,58,000/- | 3 years | 2013-16 |
| Design of a Multimodal Biometric System for Various Security and Forensic applications (Phase-I) | Principal Investigator | UPE-II, UGC, Govt. of India | Rs.13,63,200/- | 3 Years | 2012-15 |
| Sanketantar : A font converter for Samit font encoded Bangla document to Unicode encoded Bangla document and vice versa | Co-Investigator | SNLTR, Govt. of West Bengal, India | Rs.1,20,000/- | 6 months | 2009 |
| A vision based system for real-time tracking of human activities against a complex background | Principal Investigator | Jadavpur University | Rs.50,000/- | 1 Year | 2006-07 |

E. Industrial Projects Undertaken:

| Responsibility | Title of Project | Client | Year | Status |
|----------------|------------------|--------|------|--------|
|----------------|------------------|--------|------|--------|

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|-----------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------|-----------|
| Convenor (Principal Investigator) | Development of an Automatic Handwritten Document Recognition System | eMotions Infomedia Pvt. Ltd., Kolkata, India & Kolkata Police | 2009-10 | Completed |
| Convenor (Principal Investigator) | Development of a Red Light Violation Detection system for an integrated vehicular traffic management | eMotions Infomedia Pvt. Ltd., Kolkata, India & Kolkata Police | 2008-11 | Completed |

F. Patents

- Satadal Saha, **Subhadip Basu**, Mita Nasipuri, and Dipak Kumar Basu. "Image binarization based on grey membership parameter of pixels." U.S. Patent 8,744,208, issued June 3, 2014.
- Satadal Saha, **Subhadip Basu**, Mita Nasipuri, and Dipak Kumar Basu. "Image binarization based on grey membership parameters of pixels." U.S. Patent 8,406,554, issued March 26, 2013.

13. Scholarship, Fellowship, Awards etc.

- Received **DAAD Fellowship** to visit Hannover Medical School, Germany during May-June, 2018
- Received an honorary position as **Research Scientist** from Department of Electrical and Computer Engineering, University of Iowa, USA.
- Received **Research Award from UGC**, Govt. of India for 2016-2018
- **Best Paper Award** in 4th International Conference on Advanced Computing, Networking, and Informatics (ICACNI), NIT Rourkela, Sep. 2016.
- Visiting Professor at LORIA, University of Lorraine, France, May-June, 2016.
- Received DST-ITS grant from Govt. of India to attend 18th ICIAP at Genoa, Italy, Sep. 2015.
- **Best Paper Award** in First International Conference on ETCSIT, Kalyani University, India, 2015.
- Received EU-cLink Fellowship in 2015 to visit University of Bournemouth, UK, for one month.
- Received **FAST-TRACK Young Scientist Grant** in 2012 from Department of Science and Technology, Govt. of India, for a period of three years.
- Received European Union **EMMA-West Post-Doctoral fellowship** in 2012 for visiting University of Warsaw, Poland, for a period of six months.
- Received EMEA-2 Post-Doctoral fellowship in 2012 for visiting Université Pierre et Marie CURIE, France, for a period of nine months (did not join).
- Received DST-ITS grant from Govt. of India to visit HUST, China, during IEEE-ICBMT 2011.
- Received **BOYSCAST Young Scientist fellowship** in 2010 from Department of Science and Technology, Govt. of India, to visit University of Iowa, US, for a period of one year.
- Received European Union EMMA fellowship in 2009 for visiting University of Warsaw, Poland.
- Received **Hitachi Visiting Researcher (HIVIP) fellowship** in 2007 for visiting Hitachi Central Research Laboratory, Tokyo, Japan.
- Offered *Teacher Fellow* under Early Faculty Induction Programme of AICTE in 1999 (did not join).
- Awarded *National Scholarship* for excellence (ranked 24th in the state of West Bengal, India) in Madhyamik Pariksha (10th Standard Examination).

14. Membership of Professional Bodies:

- Senior Member of IEEE, USA
- Life-member, IUPRAI (affiliated to IAPR).

15. Professional activities:

- **Guest Editor, Pattern Recognition Letters (IF: 1.995)**, Special issue on "DLVTA: Deep Learning for Video Text Analysis"
- **Guest Editor, Briefings in Functional Genomics (IF: 4.098)**, Special issue on "Emerging and Threatening Infectious Diseases: Functional Genomics Approaches"
- Joint Coordinator, MHRD Sponsored one-week GIAN course on "Human Genomics: Computational Methods and Applications", to be held at CSE Dept, JU during Dec. 11-16, 2017
- Joint Coordinator, MHRD Sponsored one-week GIAN course on "Digital Topology and Geometry in Medical Imaging: Theory and Application", held at CSE Dept, JU during January 9-14, 2017
- Program Chair, 2nd IEEE International Conference on Recent Trends in Information Systems (ReTIS-2015); International Conference on Recent Trends in Information Systems (ReTIS-2011); 2nd National Conference on Recent Trends in Information Systems (ReTIS-2008).

- Organizing Vice-Chair, 9th International Conference on Distributed Computing and Networks (ICDCN), January 2008, Kolkata
- Convener, Organizing committee, 11th International Conference on Frontiers in Handwriting Recognition (ICFHR), November 2010, Kolkata.
- Convener, National Conference on Recent Trends in Information Systems (ReTIS-2006), Kolkata.
- Member, Program Committee: CIMTA-2009; ICACCI-2013; ICPRAM-2015; RetComp-2015; iNIS-2015; iNIS-2016; ICPRAM-2017;
- Reviewer of Extra Mural Grant Proposals, DST-SERB, Govt. of India.
- Reviewer, IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI), IEEE Transaction on Fuzzy Systems (TFS), IEEE Transaction on Biomedical Engineering (TBME), Pattern Recognition Letters, Applied Soft Computing, BMC Bioinformatics, International Journal of Document Analysis and Recognition (IJ DAR), International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI) etc.
- Vice-Chair, (past Secretary, Treasurer), Computer Chapter, IEEE Kolkata Section.
- Member, Executive Committee, IEEE Young Professional affinity group, IEEE Kolkata section.
- Member, Board of Studies, School of Computer Science & Engineering, Techno India University, Kolkata
- Member, Board of Studies, School of Computer Application, Techno India University, Kolkata
- PhD thesis examiner: IIT-BHU, RK University, Rajasthan, VTU, Karnataka, MS University, Tamilnadu.
- PhD Committee member, Dept. of IT, IEST, Shibpur.

16. Current Areas of Research

- Digital topology and geometry
- Handwritten/printed document analysis, segmentation and recognition
- Biomedical image analysis, Bioimage informatics
- Bioinformatics

Subhadip Basu

(Subhadip Basu)

Place: Kolkata, India

Date: November 14, 2018

List of Major Journal Publications (SCI/Scopus/UGC indexed):

2018

1. Sovan Saha, A. Prasad, Piyali Chatterjee, **Subhadip Basu**, Mita Nasipuri, “Protein function prediction from protein-protein interaction network using gene ontology based neighborhood analysis and physico-chemical features,” DOI: 10.1142/S0219720018500257, *in press*.
2. Halder, A.K., Chatterjee, P., M., Nasipuri, Plewczynski, D., **Basu, Subhadip**, “3gClust: Human Protein Cluster Analysis,” *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2018, DOI: 10.1109/TCBB.2018.2840996 , *in press*.
3. S Bhowmik, S Malakar, R Sarkar, **S Basu**, M Kundu, M Nasipuri, “Off-line Bangla handwritten word recognition: a holistic approach,” *Neural Computing and Applications*, 1-16, DOI: 10.1007/s00521-018-3389-1, *in press*.
4. **Subhadip Basu**, Dariusz Plewczynski, “Emerging and threatening infectious diseases,” *Briefings in Functional Genomics*, vol. 17, no.6, pp. 372-373, 2018.
5. A. Banerjee, S. Basu, **Subhadip Basu**, M. Nasipuri, “ARTeM: a new system for human authentication using finger vein images”, *Multimedia Tools and Applications*, 77(5), 5857-5884, 2018.
6. **Subhadip Basu**, P. K. Saha, M. Roszkowska, M. Magnowska, E. Baczynska, N. Das, D. Plewczynski and J. Wlodarczyk, “Quantitative 3-D morphometric analysis of individual dendritic spines,” *Scientific Reports*, 8: 354, 2018.
7. P. Dutta, **S. Basu** and M. Kundu, “Assessment of semantic similarity between proteins using information content and topological properties of the Gene Ontology graph”, *IEEE/ACM Transactions on Computational Biology and Bioinformatics* Volume: 15, Issue: 3, pp. 839-849, 2018.
8. PK Singh, R Sarkar, N Das, **S Basu**, M Kundu, M Nasipuri, “Benchmark databases of handwritten Bangla-Roman and Devanagari-Roman mixed-script document images”, *Multimedia Tools and Applications, Springer*, Volume 77, Issue 7, pp 8441–8473, 2018.

2017

9. Anup Kumar Halder, Pritha Dutta, Mahantapas Kundu, **Subhadip Basu** and Mita Nasipuri, “Review of computational methods for virus-host protein interaction prediction: a case study on novel Ebola-Human interactions”, *Briefings in Functional Genomics*, vol. 17, no.6, pp. 381-391, 2017.
10. Sovan Saha, Kaustav Sengupta, **Subhadip Basu**, Mita Nasipuri and Piyali Chatterjee, “Analysis of Protein Targets in Pathogen-Host Interaction in Infectious Diseases: A Case Study on *Plasmodium falciparum* and *Homo sapiens* Interaction Network”, *Briefings in Functional Genomics*, vol. 17, no.6, pp. 441-450, 2017.
11. M H Mahalat, A F Mollah, **Subhadip Basu**, Mita Nasipuri, "Design of Novel Post-Processing Algorithms for Handwritten Arabic Numerals Classification", *International Journal of Applied Pattern Recognition*, vol. 4(4), pp. 342–357, 2017.
12. Anupam Banerjee, Priti Das, Orachorn Mekkerdchoo, Chaleeda B, Georges Srzednicki, Mita Nasipuri, and **Subhadip Basu**, “A soft computing tool for species classification and prediction of glucomannan content in *Amorphophallus* genus”, *Engineering in Life Sciences*, Volume17, Issue12, Pages 1254-1263, 2017.
13. Pritha Dutta, Anup Kumar Halder, **Subhadip Basu**, and Mahantapas Kundu, “A survey on Ebola genome and current trends in computational research on the Ebola virus”, *Briefings in Functional Genomics*, vol. 17, no.6, pp. 374-380, 2017.
14. Indranil Guha, Nirmal Das, Pranati Rakshit, Mita Nasipuri, Punam K. Saha, **Subhadip Basu**, "A semiautomatic approach for segmentation of carotid vasculature from patients' CTA images", *Innovations in Systems and Software Engineering, Springer* Volume 13, Issue 4, pp 243–250, 2017.

2016

15. P. K. Saha, **Subhadip Basu**, E. A. Hoffman, “Multi-Scale Opening of Conjoined Fuzzy Objects: Theory and Applications,” *IEEE Transactions on Fuzzy Systems*, vol. 24, no. 5, pp. 1121-1133, 2016.
16. P. Chatterjee, **Subhadip Basu**, J. Zubek, M. Kundu, M. Nasipuri and D. Plewczynski, “PDP-CON: Prediction of domain/linker residues in protein sequences using consensus approach,” *Journal of molecular modelling*, vol. 22, no. 4, pp. 1-15, 2016.
17. **Subhadip Basu**, D. Plewczynski, S. Saha, M. Roszkowska, M. Magnowska, E. Baczynska, and J. Wlodarczyk, “2dSpAn: semiautomated 2-d segmentation, classification and analysis of hippocampal dendritic spine plasticity,” *Bioinformatics*, **32** (16), pp. 2490 – 2498, 2016.

2015

18. BK Sriwastava, **S Basu**, U Maulik, “Predicting protein-protein interaction sites with a novel membership based Fuzzy SVM classifier,” *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 12, Issue 6, pp. 1394-1404, 2015.

19. BK Sriwastava, **S Basu**, U Maulik, "Protein-Protein interaction site prediction in *Homo sapiens* and *E. coli* using an interaction-affinity based membership function in Fuzzy SVM," *Journal of Biosciences*, 40(4):809-818, 2015.
20. Julian Zubek, Marcin Tatjewski, Adam Boniecki, Maciej Mnich, **Subhadip Basu** and Dariusz Plewczynski, "Multi-level machine learning prediction of protein-protein interactions in *Saccharomyces cerevisiae*," *PeerJ*, 3, e1041, 2015.
21. N. Das, R. Sarkar, **S. Basu**, P. K. Saha, M. Kundu, M. Nasipuri, "Handwritten Bangla Character Recognition using a Soft Computing Paradigm embedded in Two pass Approach," *Pattern Recognition*, Elsevier, vol. 48, Issue 6, pp. 2054 – 2071, 2015.
22. Satadal Saha, **Subhadip Basu**, Mita Nasipuri, "iLPR: An Indian License Plate Recognition System", *Multimedia Tools and Applications*, Springer, 74(23): 10621-10656 (2015).

2014

23. S. Saha, P.Chatterjee, **Subhadip Basu**, M.Kundu, M.Nasipuri, "FunPred-1: Protein Function Prediction from Protein Interaction Network Using Neighborhood Analysis", *Cellular & Molecular Biology Letters*, Springer, Vol. 19 (4), pp. 675-691, 2014.
24. Sarkar, Ram, Nibaran Das, **Subhadip Basu**, Mahantapas Kundu, and Mita Nasipuri. "Extraction of Text Lines from Handwritten Documents Using Piecewise Water Flow Technique," *Journal of Intelligent Systems*, vol. 23 (3), pp. 245 - 260 (2014).
25. Nibaran Das, Kallol Acharya, Ram Sarkar, **Subhadip Basu**, Mahantapas Kundu, Mita Nasipuri, "A Benchmark Image Database of Isolated Bangla Handwritten Compound Characters," *International Journal on Document Analysis and Recognition (IJAR)*, Volume 17, Issue 4, pp. 413-431, 2014.
26. P. K. Singh, R. Sarkar, N. Das, **S. Basu**, M. Nasipuri, "Statistical Comparison of Classifiers for Script Identification from Multi-script Handwritten documents", *International Journal of Applied Pattern Recognition*, vol. 1, no. 2, pp. 152-172, 2014.

2013

27. Ayatullah Faruk Mollah, **Subhadip Basu**, Mita Nasipuri, "Handheld Device-based Character Recognition System for Camera Captured Images," *International Journal of Image and Graphics*, Vol. 13, No.04, pp. 1-21, 2013.
28. BK Sriwastava, **S Basu**, U Maulik, D Plewczynski, "PPIcons: identification of protein-protein interaction sites in selected organisms," *Journal of molecular Modeling*, volume 19, issue 9, pp 4059-4070.
29. Ayatullah Faruk Mollah, **S. Basu**, Mita Nasipuri, Dipak Kumar Basu, "Handheld Mobile Device Based Text Region Extraction and Binarization of Image Embedded Text Documents," *J. Intelligent Systems* 22(1), pp. 25-47.

2012

30. D. Plewczynski, S. Basu, I. Saha, "AMS 4.0: consensus prediction of post-translational modifications in protein sequences," *Amino Acids*, *Springer*, Volume 43, Issue 2, pp 573-582, 2012.
31. N. Das, J.M. Reddy, R. Sarkar, **S. Basu**, M. Kundu, M. Nasipuri, D.K. Basu, "A Statistical-Topological Feature Combination for Recognition of Handwritten Numerals," *Applied Soft Computing*, Elsevier, vol. 12, no. 8, pp. 2486-2495, 2012.
32. N. Das, R. Sarkar, **S. Basu**, M. Kundu, M. Nasipuri, and D. K. Basu, "A genetic algorithm based region sampling for selection of local features in handwritten digit recognition application," *Applied Soft Computing*, Elsevier, vol. 12, no. 5, pp. 1592-1606, 2012.
33. R. Sarkar, N. Das, S. Basu, M. Kundu, M. Nasipuri and D. K. Basu, "CMATERdb1: a database of unconstrained handwritten Bangla and Bangla-English mixed script document image," *International Journal on Document Analysis and Recognition*, Springer, vol. 15, no. 1, pp. 71-83, 2012.

2011

34. R.Sarkar, S.Malakar, N.Das, **S.Basu**, M.Kundu, M.Nasipuri, "Word Extraction and Character Segmentation from Text Lines of Unconstrained Handwritten Bangla Document Images," *Journal of Intelligent Systems, De Gruyter*, vol. 20, Issue 3, pp. 227–260, 2011.
35. S. Rakshit, K.S. Sengupta, **S. Basu**, " Handwritten Document Management System: Key challenges and probable Solutions for Indian Railway and Healthcare Industries," *International Journal of Advanced Research in Computer Science*, vol.2, no.5, pp. 430-434, 2011.
36. P.Chatterjee, **S.Basu**, M.Kundu, M.Nasipuri and D.Plewczynski, "PSP_MCSVM: brainstorming consensus prediction of protein secondary structures using two-stage multiclass support vector machines," *Journal of Molecular Modeling*, Volume 17, Issue 9, pp 2191-2201, 2011.
37. P.Chatterjee, **S.Basu**, M.Kundu, M.Nasipuri and D.Plewczynski, "PPI_SVM: Prediction of protein-protein interactions using machine learning, domain-domain affinities and frequency tables", *Cellular & Molecular Biology Letters*, Volume 16, Number 2, 264-278.

2010

38. **S. Basu**, N. Das, R. Sarkar M. Kundu, M. Nasipuri, D. K. Basu, "A novel framework for automatic sorting of postal documents with multi-script address blocks" *Pattern Recognition, Elsevier* 43(10): pp. 3507-3521 (2010).

39. S. Rakshit, S.S.Das, K.S. Sengupta, **S. Basu**, "Automatic Processing of Structured Handwritten Documents: An Application for Indian Railway Reservation System," *International Journal of Computer Applications*, vol.6, no. 11, pp. 26-30, 2010.
40. **S. Basu** and D. Plewczynski, "AMS 3.0: Prediction of Post-Translational Modifications," *BMC Bioinformatics* 2010, 11:210.
41. R. Sarkar, S. Malakar, N. Das, **S. Basu**, M. Nasipuri, "A Script Independent Technique for Extraction of Characters from Handwritten Word Images", *International Journal of Computer Applications*, vol.1, no. 23, pp. 85-90, 2010. ISSN: 0975 – 8887.
42. S. Saha, **S. Basu**, M. Nasipuri, D. K. Basu, "Localization of License Plates from Surveillance Camera Images: A Color Feature Based ANN Approach", *International Journal of Computer Applications*, vol.1, no. 23, pp. 27-31, 2010. ISSN: 0975 – 8887.
43. D. K. Sil, **S. Basu**, M. Nasipuri, "An adaptive fuzzy technique for real-time detection of multiple faces against a complex background," *International Journal of Computer Applications*, vol.1, no. 23, pp. 21-26, 2010. ISSN: 0975 – 8887.
44. N. Das, S. Pramanik, R. Sarkar, **S. Basu**, P.K.Saha, "Recognition of Isolated Multi-Oriented Handwritten/Printed Characters using a Novel Convex-Hull Based Alignment Technique," *International Journal of Computer Applications*, vol.1, no. 23, pp. 40-45, 2010. ISSN: 0975 – 8887.
45. A. F. Mollah, **S. Basu**, M. Nasipuri, "Segmentation of Camera Captured Business Card Images for Mobile Devices", *International Journal of Computer Science and Applications*, 1(1), pp. 33-37, June 2010.

2009

46. **S.Basu**, N.Das, R.Sarkar M.Kundu, M.Nasipuri, D.K.Basu, "A Hierarchical Approach to Recognition of Handwritten Bangla Characters", *Pattern Recognition, Elsevier*, vol. 42, no. 7, pp. 1467 – 1484, 2009.
47. N. Das, A. Murmu, S. Roy, R. Sarkar, **S. Basu**, "A Novel Scheme for Editing and Inter Conversion between ASCII / ISCII / Unicode Encoded Multilingual Documents", *Language Forum*, vol. 35, no. 2, July-Dec 2009.

2007

48. **S.Basu**, C.Chaudhury, M.Kundu, M.Nasipuri, D.K.Basu, "Text Line Extraction from Multi Skewed Handwritten Documents," *Pattern Recognition, Elsevier*, vol. 40, no. 6, pp. 1825 – 1839, 2007.

List of Publications in other Refereed Journals with ISSN:

1. Pranati Rakshit, Nirmal Das , Mita Nasipuri, **Subhadip Basu**, “Classification of normal and anomalous regions in 3D human cerebrovascular phantom” International Journal of Scientific and Engineering Research (*in press*), ISSN 2229-5518.
2. Soumi Paul, **Subhadip Basu**, Mita Nasipuri, “Microsoft Kinect in Gesture Recognition: A Short Review”, *IJCTA*, 8(5), pp. 2071-2076, 2015.
3. Ankush Acharyya, Sandip Rakshit, Ram Sarkar, **S. Basu**, and M. Nasipuri. "Handwritten Word Recognition Using MLP based Classifier: A Holistic Approach.", International Journal of Computer Science Issues, Vol. 10, Issue 2, No 2, pp. 422-427, (2013).
4. A. F. Mollah, N. Majumder, **S. Basu**, M. Nasipuri, "Design of an Optical Character Recognition System for Camera-based Handheld Devices", *Int. J. of Computer Science Issues*, Vol. 8, No. 4, pp. 283-289, July, 2011.
5. Satadal Saha, **S. Basu** and Mita Nasipuri, “Automatic Localization and Recognition of License Plate Characters for Indian Vehicles”, International Journal of Computer Science & Emerging Technologies, Vol. 2, No. 4, pp. 520-533, August 2011.
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111. **S. Basu**, N. Das, R. Sarkar, M. Kundu, M. Nasipuri, D. K. Basu, "Handwritten Bangla Alphabet Recognition using an MLP Based Classifier," in Proc. of the 2nd National Conf. on Computer Processing of Bangla, pp. 285-291, Feb-2005, Dhaka.

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112. **S. Basu**, S. Chakraborty, K. Mukherjee, S. K. Pandit, "Online Tracking of Skin Colour Regions against a Complex Background," in Proc. of IEEE INDICON, pp. 184-186, Dec-2004, Kharagpur.
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115. **S. Basu**, C. Chaudhury, M. Kundu, M. Nasipuri, D. K. Basu, "Skew Angle Correction and Line Extraction from Unconstrained Handwritten Bengali Text," in Proc. of 5th Intl. Conf. on Advances in Pattern Recognition, pp. 271-274, Dec-2003, ISI, Kolkata.

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116. **S. Basu**, C. Chaudhury, M. Kundu, M. Nasipuri, D. K. Basu, "Segmentation of Offline Handwritten Bengali Script," in Proc. of 28th IEEE ACE, pp. 171-174, Dec-2002, Science City, Kolkata.

Invited Talks/Special Lectures Delivered:

International

1. “Bioimage Informatics@JU – Methods & Applications”, Hannover Medical School, Germany, May 15, 2018
2. “Quantitative 2-D/3-D morphometric analysis of individual dendritic spines”, Hannover Medical School, Germany, July 19, 2017.
3. “Multi-scale opening of conjoined fuzzy objects: theory and applications”, at LORIA, University of Lorraine, France, June 7, 2016.
4. “Digital water flows: theory and applications”, at LORIA, University of Lorraine, France, June 2, 2016.
5. “Pattern Recognition and Image Analysis: current research and future possibilities”, at LORIA, University of Lorraine, France, May 25, 2016.
6. “Pattern Recognition and Digital Image Processing in Predictive Analytics”, at the Faculty of Science and Technology, Bournemouth University, UK, on July 03, 2015.
7. Plenary talk on “Computational Predictive Models in Protein Informatics”, in Advances in Molecular Modeling Conference, at ICM, Warsaw, Poland, 2013.
8. “Multi-scale opening of conjoined structures in shared intensity space”, at Interdisciplinary Centre for Computational and Mathematical Modelling (ICM), University of Warsaw, Poland, 2012.
9. “Multi-Scale Topo-Morphologic Opening (MSTMO) Algorithm: Theory and Applications”, at the Nencki Institute of Experimental Biology, Warsaw, Poland, 2012.
10. “Multi-scale opening of conjoined structures in shared intensity space”, at the Interdisciplinary Centre for Computational and Mathematical Modelling (ICM), University of Warsaw, Poland, on 7th November, 2012.
11. “Segmentation of cerebro-vasculature in CT Angiography using multi-scale topomorphologic opening algorithm”, at the Medical Image Processing Group, University of Pennsylvania, Philadelphia, USA, on 15th April 2011.
12. “A discussion on some applications of pattern/image analysis”, at the Department of Computer Science, University at Buffalo, The State University of New York, USA, on 22nd April 2011.
13. “Some Techniques on different Pattern Recognition Applications”, at the Interdisciplinary Centre for Computational and Mathematical Modelling (ICM), University of Warsaw, Poland, on 26th August, 2009.

National

1. Invited talk in the TEQIP sponsored one day seminar "Biomedical Engineering in Human Welfare" on 3rd August, 2018, arranged by the School of Bioscience and Engineering, Jadavpur University.
2. Invited talk at the three day Workshop on EMERGING TRENDS OF INFORMATION TECHNOLOGY (ETIT-2018) from 21 March to 23 March 2018, at Asutosh College second campus.
3. Guest Speaker at the 1st National Students Computing Conference on 21-22 April 2018 organized by Department of Computer Science and Engineering of VSSUT Burla.
4. Invited Speaker at Technology Awareness Programme, jointly conducted by IEEE Region10 Students Activities Committee, IEEE Computer Society and IEEE Chapter of Institute of Engineering and Management (IEM), Kolkata., 8th September 2017.
5. Invited Speaker at workshop on “Applications of Machine Learning” at NIT, Silchar, March 21, 2017.
6. Invited Speaker at workshop on “Image Processing and Advanced Computing” in technical collaboration with Computer Chapter, IEEE, Kolkata section, at MAKAUT, W.B., 15th March, 2017.
7. Invited Speaker at the one day seminar on “Recent Trends in Intelligent Computing” on 10th September 2016, at Supreme Knowledge Foundation Group of Institutions, Mankundu, Hooghly-712139.
8. "Pattern Recognition and Image Processing: Current Trends", Techno India University, Aug. 10, 2016.
9. "Research Trends in Pattern Recognition and Image Analysis", Techno India College of Technology, Jan. 15, 2016
10. "Pattern Recognition and Digital Image Processing in Predictive Analytics", UGC sponsored two days seminar on “Data Science: Analytics, interpretation and usability of Data” at GCECT, Kolkata on 25th and 26th February, 2016
11. “Research Trends in Pattern Recognition and Image Analysis”, Faculty Development Program on “Future Aspects of Computer Science and its applications” (FACSA 2016), at RCCIIT, Kolkata, Feb. 05, 2016.
12. “Predictive Analytics”, in the Workshop on BIG DATA Initiatives: Trends and Applications, Organized by Department of Computer Science & Engineering, BIT Mesra off Campus Deoghar, Sep. 19-20, 2015.
13. “Pattern Recognition and Digital Image Processing in Predictive Analytics”, in two-day national workshop on “Data Quality, Predictive Analytics and Business Decision Making”, 13-14 March 2015, Kaziranga University, Assam.
14. “Multi-Scale Opening of Fused Objects: Theory & Applications to Medical Imaging”, at the TEQIP-II Sponsored Two-day Seminar on, “Bio-Informatics And Bio-Medical Engineering (Bibme-2014)”, Organized by the MCET, Murshidabad, 05-06 April, 2014.

15. "Multi-scale opening of conjoined structures in shared intensity space", organized by the Computational Intelligence Chapter, IEEE Kolkata section, at ECSU Unit, ISI, India, 2013.
16. "Multi-scale opening of conjoined structures in shared intensity space", organized by the GOLD Affinity group, IEEE Calcutta section, at Jadavpur University, India, 2013.
17. "Applications on Pattern Recognition and Machine Learning," at the workshop on Soft Computing, organized by MCKV Institute of Engineering, Howrah, 24th November, 2009.
18. "Optical Character Recognition: *Research trends and potential applications*", at MCKV Institute of Engineering, Howrah, 31st October, 2009.
19. "Some Techniques on *Computer Vision Applications*", at the one-day workshop on Recent Advances in Computer Vision and Applications, Calcutta Club, Kolkata, 12th April, 2009.
20. "Optical Character Recognition: Current *state-of-the-art* and *future research directions*", at the School of Cultural Texts and Records, Jadavpur University, 2nd September, 2009.
21. "Some Techniques on *Handwritten Text Recognition* and *Computer Vision Applications*", at the 3-day workshop on Pattern Recognition using Machine Learning Techniques, Netaji Subhash Engineering College, Kolkata, 27th March 2009.
22. "Retrieval of handwritten textual annotations using *Tesseract* open source OCR engine", at a special lecture organized by the GOLD affinity group, IEEE Calcutta section, 26th December, 2008.
23. "Some Techniques on *Handwritten Text Recognition* and *Computer Vision Applications*", at the Humboldt Kolleg, Dec. 11-13 2008, PURI, India.