

CURRICULUM VIATE

1. **Name** Dr. (Mrs.) JAYA SIL
 2. **Designation** Professor
 3. **Address** Department of Computer Science & Technology
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4. Academic performance:

Sl. No.	Year	Examination	Class
i)	1984	B.E.(Electronics & Tele Comm. Engg)	I
ii)	1986	M.E.(TELE)	I
iii)	1996	Ph.D.(Engg.)	Specialization in Artificial Intelligence

5. **Topic of Ph.D. Thesis:** INTELLIGENT EXPERT AND LEARNING SYSTEMS USING PETRI NET.

6. **Research Interest:** i) Image Processing and Pattern Recognition, ii) Data Mining, iii) Machine Learning, iv) BioInformatics.

7. **Teaching Interest:** i) Fuzzy systems, ii) Machine Learning, iii) Computer Graphics

8. Project supervised:

i). Chief Coordinator of project: “PROBABILISTIC REASONING BASED EXPERT SYSTEM FOR SCENE INTERPRETATION” sponsored by All India Council for Technical Education (AICTE), 1999.

ii). Chief Coordinator of Project: "PERSONNEL IDENTIFICATION USING FACIAL IMAGE AND FINGER PRINT MATCHING" sponsored by AICTE, 2003.

iii) Principal Investigator of prject: “Project Remote Health: A framework for Health-care Services using Mobile and Sensor Cloud Technologies”, sponsored by Information technology research academy (ITRA), Govt. of India, 2014-2016

iv) CO-PI, jointly with Centre of Health Science and Technology, IESTS, Bioactivity guided fractionation of phytochemicals from medicinal plants against brain malignancy authenticated by DNA bar coding, Government of India, Ministry of AYUSH, National Medicinal Plants Board, Rs. 37.546 lakh, Year of Sanction & duration: 2016, 3yr

9. **No. of Ph.D. Thesis supervised and awarded:** 7

No. of Ph.D. thesis submitted: 2

Ph.D. students under supervision: 8

10. Awards:

- Awarded *The Corps of Electrical And Mechanical Engineers Prize, 1989-90* by Institute of Engineers (I), for best Journal paper.
- Received post doc fellowship in Nanyang Technological University, Singapore, 2002-2003

- c. Visited University of Technology, Wraclaw, Poland as Senior Scientist by INSA UNDER BILATERAL EXCHANGE PROGRAMME 2012

11. Other relevant informations:

- a. Guest Editor of Journal on Artificial Intelligence and Soft Computing, Inderscience publication
- b. Reviewer of IEEE Transactions, Elsevier Science Direct Journals, Springer (from 2005 and continuing)
- c. Visited Bioinformatics lab in Husar, Heidelberg, Germany under TEQIP project, 2006
- d. Visiting faculty in Tsinghua University, Beijing, China, April 2010

12. Books Published:

- a. Rough Set and Statistical Approach to Knowledge Discovery, VDM Verlag Dr. Müller e.K., ISBN 978-3-639-34766-1, 2011
- b. Book Chapter 5: Spread Spectrum Watermarking: Principles and Applications in Fading Channel, Watermarking - Volume 1, ISBN 978-953-51-0618-0, vol. 1, pp. 85-104, 2012
- c. Book Chapter: Evolution of Genetic Algorithms in Classification Rule Mining: Handbook of Research on Computational Intelligence for Engineering, Science and Business
- d. Book Chapter: Feature Selection for Adaptive Decision Making in Big Data Analytics: Data Science and Big Data Computing, 978-3-319-31859-2, 333774_1_En, (12), Springer

13. Conferences:

- a. Bhowmick, R.S., Sil, J. (2020). Memorizing and Retrieving of Text Using Recurrent Neural Network—A Case Study on Gitanjali Dataset. In: Das, A., Nayak, J., Naik, B., Pati, S., Pelusi, D. (eds) Computational Intelligence in Pattern Recognition. Advances in Intelligent Systems and Computing, vol 999. Springer, Singapore. https://doi.org/10.1007/978-981-13-9042-5_35
- b. R. S. Bhowmick, I. Ganguli and J. Sil, "Introduction and Correction of Bengali-Hindi Noise in Large Word Vocabulary using RNN," 2020 International Conference on Communication and Signal Processing (ICCSP), Chennai, India, 2020, pp. 277-281, doi: <https://doi.org/10.1109/ICCSP48568.2020.9182244>
- c. R. S. Bhowmick, I. Ganguli and J. Sil, "Improvised Transformer Network for NER on Low Resource EnglishHindi Code-Mixed Language from Scratch," 2020 7th International Conference on Soft Computing & Machine Intelligence (ISCFMI), Stockholm, Sweden, 2020, pp. 265-269, doi: <https://doi.org/10.1109/ISCFMI51676.2020.9311588>
- d. I. Ganguli, R. S. Bhowmick and J. Sil, "Performance analysis of SOTA Transformer Network in Numerical Expression Calculation," 2020 IEEE 17th India Council International Conference (INDICON), New Delhi, India, 2020, pp. 1-6, doi: <https://doi.org/10.1109/INDICON49873.2020.9342053>
- e. I. Ganguli, R. S. Bhowmick, S. Biswas and J. Sil, "Empirical Auto-Evaluation of Python Code for Performance Analysis of Transformer Network Using T5 Architecture," 2021 8th International Conference on Smart Computing and Communications (ICSCC), Kochi, Kerala, India, 2021, pp. 75-79, doi: <https://doi.org/10.1109/ICSCC51209.2021.9528123>
- f. Rajat Subhra Bhowmick, Trina Ghosh, Astha Singh, Sayak Chakraborty, and Jaya Sil. 2021. Shallow learning for MTL in end-to-end RNN for basic sequence tagging. In Proceedings of the

2021 Thirteenth International Conference on Contemporary Computing (IC3-2021). Association for Computing Machinery, New York, NY, USA, 252–261.

<https://doi.org/10.1145/3474124.3474160>

- g. R. S. Bhowmick, I. Ganguli, J. Paul and J. Sil, "Effectiveness of Decoder Transformer Network in breaking Low-resource Real-time text Captcha System," 2021 International Conference on Cyberworlds (CW), Caen, France, 2021, pp. 287-290, doi: <https://doi.org/10.1109/CW52790.2021.00054>
- h. Paul, J., Bhowmick, R.S., Sil, J. (2022). Low-Computation IoT System Framework for Face Recognition Using Deep Learning Algorithm. In: Das, A.K., Nayak, J., Naik, B., Vimal, S., Pelusi, D. (eds) Computational Intelligence in Pattern Recognition. CIPR 2022. Lecture Notes in Networks and Systems, vol 480. Springer, Singapore. https://doi.org/10.1007/978-981-19-3089-8_3
- i. Paul, J., Roy, A., Mallick, S., Sil, J. (2023). A Comparative Study of Deep Learning-Based Face Recognition and Emotion Detection Techniques Using Social Media Customized Cartoon Post. In: Das, A.K., Nayak, J., Naik, B., Vimal, S., Pelusi, D. (eds) Computational Intelligence in Pattern Recognition. CIPR 2022. Lecture Notes in Networks and Systems, vol 725. Springer, Singapore. https://doi.org/10.1007/978-981-99-3734-9_33
- j. S. Mallick, J. Paul, N. Sengupta and J. Sil, "Study of Different Transformer based Networks For Glaucoma Detection," TENCON 2022 - 2022 IEEE Region 10 Conference (TENCON), Hong Kong, Hong Kong, 2022, pp. 1-6, doi: <https://doi.org/10.1109/TENCON55691.2022.9977730>
- k. S. Mallick, N. Saha, J. Paul, I. Ganguli, S. Debnath and J. Sil, "An Efficient Deep Learning Framework for Glaucoma Diagnosis Using Convolution Mixed Transformer Network," TENCON 2023 - 2023 IEEE Region 10 Conference (TENCON), Chiang Mai, Thailand, 2023, pp. 1111-1116, doi: <https://doi.org/10.1109/TENCON58879.2023.10322467>

14. Journals:

- a. Rajat Subhra Bhowmick, Isha Ganguli, Jayanta Paul, and Jaya Sil. 2021. A Multimodal Deep Framework for Derogatory Social Media Post Identification of a Recognized Person. ACM Trans. Asian Low-Resour. Lang. Inf. Process. 21, 1, Article 2 (January 2022), 19 pages. <https://doi.org/10.1145/3447651>
- b. Abu Sufian, Anirudha Ghosh, Avijit Naskar, Farhana Sultana, Jaya Sil, M.M. Hafizur Rahman, BDNet: Bengali Handwritten Numeral Digit Recognition based on Densely connected Convolutional Neural Networks, Journal of King Saud University - Computer and Information Sciences, Volume 34, Issue 6, Part A, 2022, Pages 2610-2620, ISSN 1319-1578, <https://doi.org/10.1016/j.jksuci.2020.03.002>
- c. Rajat Subhra Bhowmick, Rahul Indra, Isha Ganguli, Jayanta Paul, and Jaya Sil. 2023. Breaking Captcha System with Minimal Exertion through Deep Learning: Real-time Risk Assessment on Indian Government Websites. Digital Threats 4, 2, Article 28 (June 2023), 24 pages. <https://doi.org/10.1145/3584974>
- d. Rajat Subhra Bhowmick, Isha Ganguli, Ananya Paul, Jayanta Paul, and Jaya Sil. 2023. Improving Indic code-mixed to monolingual translation using Mixed Script Augmentation, Generation & Transfer Learning. ACM Trans. Asian Low-Resour. Lang. Inf. Process. Just Accepted (July 2023). <https://doi.org/10.1145/3606695>
- e. Isha Ganguli, Rajat Subhra Bhowmick & Jaya Sil (2023) Deep Insights of Erroneous Bengali–English Code-Mixed Bilingual Language, IETE Journal of Research, 69:6, 3334-3345, DOI: [10.1080/03772063.2021.1934125](https://doi.org/10.1080/03772063.2021.1934125)
- f. I. Ganguli, R.S. Bhowmick, S. Biswas, J. Sil, Intelligent Program Correction and Evaluation System, International Journal on Artificial Intelligence Tools, DOI: <https://doi.org/10.1142/S0218213023500719>

- g. Siddhartha Mallick, Jayanta Paul, Jaya Sil, Response Fusion Attention U-ConvNext for accurate segmentation of optic disc and optic cup, *Neurocomputing*, Volume 559, 2023, 126798, ISSN 0925-2312, <https://doi.org/10.1016/j.neucom.2023.126798>

15. Lectures and Invitations:

- a. Invited Lecture in 3rd IEEE Conference in “Recent Advances in Information Technology, 3-5 March 2016
 - b. Tutorial Lecture in 3rd International conference on Swarm, Evolutionary and Memetic Computing (SEMCCO 2012), 19th December 2012
 - c. External Faculty Invitation in MHRD/AICTE Sponsored Winter School, IIT KGP, LAAL 2009, 28 Nov. 2009
 - d. International Summer and Winter Term (ISWT) invitation in IIT KGP for delivering lecture on “Logic and Application Logic” Dec 7-Dec18, 2015
 - e. Acted as examiner of Ph. D. theses in different university like, Jadavpur University, IIIT Allahabad, Sambalpur University, ISM Dhanbad, India
 - f. Invited in different committees for faculty recruitment in different institutes like Jadavpur University, University of Kolkata, Tripura Public service committee
16. Member in different Accreditation Committees like, NAAC, NBA in India

17. Research Publications: 35 (International journals), 2 (National Journals) and 150 (International conferences)