

FACULTY PROFILE



Name: DR. ANU SINGHA

Designation: Assistant Professor

E-Mail: anus@srmist.edu.in

Professional Qualification:

Ph.D. in CSE	Tripura University (A Central University)	Image Processing and Computer Vision	April, 2021
M.Tech	Tripura University (A Central University)	Computer Science and Engineering	2015
MCA	South Asian University, New Delhi	Computer Applications	2013

Publications (Journals & Conferences):

Patents

- Indian Patent entitled "**System and Method for Detecting Object in Adverse Atmosphere by Restoring Degraded Image in Deep Convolutional Layer**" Invented by **Anu Singha**, Sourav Dey Roy and Mrinal Kanti Bhowmik, Application No. [202131002651](#), Filed: 20/01/2021, Published: 22/06/2022, Grant: Under Process.
- Indian Patent entitled "**System and Method for Classification of Multiclass Scenes in Adversarial Weather using a Convolution Neural Network**" Invented by Sourav Dey Roy, **Anu Singha**, Priya Saha and Mrinal Kanti Bhowmik, Application No. 202231068251, Filed: 28/11/2022, Published: Under Examination, Grant: ??.

Journals

- **Anu Singha**, Mrinal Kanti Bhowmik , "**Novel Deeper AWRDNet: Adverse Weather-Affected Night Scene Restorator Cum Detector Net for Accurate Object Detection**", Neural Computing and Applications, Springer, **IF-6.0 (SCD)**, Vol. 35, pp. 12729–12750, 2023.

- **Anu Singha**, Mrinal Kanti Bhowmik , "**AlexSegNet: An Accurate Nuclei Segmentation Deep Learning Model in Microscopic Images for Diagnosis of Cancer**", Multimedia Tools and Applications, Springer, **IF-3.6 (SCI)**, Vol. 82, pp. 20431–20452, 2022.
- **Anu Singha**, Mrinal Kanti Bhowmik and Debotosh Bhattacharjee, "**Akin-based Orthogonal Space (AOS): A Subspace Learning Method for Face Recognition**", Multimedia Tools and Applications, Springer, **IF-3.6 (SCI)**, Vol. 79, pp. 35069-35091, 2020.
- **Anu Singha**, Mrinal Kanti Bhowmik, "**Salient Features for Moving Object Detection in Adverse Weather Conditions during Night Time**", IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), IEEE, **IF-8.4 (SCI)**, Vol. 30, pp. 3317-3331, 2019.
- Mrinal Kanti Bhowmik, Priya Saha, **Anu Singha**, Debotosh Bhattacharjee, Paramartha Dutta, "**Enhancement of Robustness of Face Recognition System through Reduced Gaussianity in Log-ICA**", Expert Systems With Applications, Elsevier, **IF-8.5 (SCI)**, Vol. 116, pp-96-107, 2019.

Conferences

- **Anu Singha**, Vanitha Venkateswaran, "**Cardiotocography Fetal Health Data Analysis using Machine Learning**", Proceedings of 3rd International Conference on Frontiers in Computing and Systems (**COMSYS 2022**), Springer Series on Lecture Notes in Networks and Systems, IIT-Ropar, Punjab, India, Dec 19-21, 2022.
- **Anu Singha**, Priya Saha, Mrinal Kanti Bhowmik, "**Automatic Classification of Sedimentary Rocks towards Oil Reservoirs Detection**", Proceedings of 6th IAPR International Conference on Computer Vision and Image Processing (**CVIP 2021**), Springer Series on Communications in Computer and Information Science (CCIS), IIT-Ropar, Punjab, India, Dec 3-5, 2021. (Scopus)
- Rajib Debnath, **Anu Singha**, Biswajit Saha, Mrinal Kanti Bhowmik, "**A Comparative Study of Background Segmentation Approaches in Detection of Person with Gun under Adverse Weather Conditions**", Proceedings of 11th IEEE International Conference on Computing Communication and Networking Technologies (**ICCCNT 2020**), IIT-Kharagpur, West Bengal, India, July 1-3, 2020.
- **Anu Singha**, Mrinal Kanti Bhowmik, "**TU-VDN: Tripura University Video Dataset at Night Time in Degraded Atmospheric Outdoor Conditions for Moving Object Detection**", Proceedings of 26th IEEE International Conference on Image Processing (ICIP) [**Tier II Conference**], Taipei, Taiwan, pp. 2936-2940, September 22-25, 2019.
- **Anu Singha**, Mrinal Kanti Bhowmik, "**Moving Object Detection in Night Time: A Survey**", In 2nd International Conference on Innovations in Electronics, Signal Processing and Communication (IESC 2019), IEEE Xplore, NIT Meghalaya, Date 1-2 March, 2019.
- **Anu Singha**, Mrinal Kanti Bhowmik, "**Object Recognition using Representative Score Features**", 18th IEEE International Conference on Advanced Learning Technologies (ICALT 2018), IEEE Computer Society, IIT Bombay, pp. 419-421, 09-13 July 2018.
- **Anu Singha**, Mrinal Kanti Bhowmik, "**Enhancing Performance of PCA, ICA through Distribution Transformation**", Proceedings in IEEE Region 10 Humanitarian Technology Conference (R10HTC 2017), IEEE Xplore, BUET Bangladesh, 21-23 December 2017.

- Anamika Rudra Pal, **Anu Singha**, "A Comparative Analysis of Visual and Thermal Face Image Fusion based on Different Wavelet Family", Proceedings in International Conference on Innovations in Electronics, Signal Processing and Communication (IESC 2017), IEEE Xplore, NIT Meghalaya, pp. 213-218, 2017.
- Phub Namgay, **Anu Singha**, "Evaluation and Analysis of Grammatical Linguistic Pattern over Social Science and Technology Textbooks", Proceedings in 6th International Conference On Advances In Computing & Communications (ICACC 2016), Cochin, India, Elsevier, Procedia Computer Science, Volume - 93, pp. 521-532, 2016.
- **Anu Singha**, Mrinal Kanti Bhowmik, Prasenjit Dhar, Anjan Kumar Ghosh, "Analysis and Performance Evaluation of ICA-based Architectures for Face Recognition", Proceedings in 17th International Workshop on Combinatorial Image Analysis (IWCIA 2015), ISI, Kolkata, Springer-Verlag, LNCS, Volume-9884, pp. 323–336, 2015.
- **Anu Singha**, Mrinal Kanti Bhowmik, Prasenjit Dhar, Anjan Kumar Ghosh, "Independent Component Analysis Architectural Feature Evaluation by Correlating Face Images", Proceedings in 17th International Workshop on Combinatorial Image Analysis (IWCIA 2015), ISI, Kolkata, Published by Research Publishing Services (RPS), pp. 39-48, 2015, DOI: 10.3850/978-981-09-7518-0_36.

Book Chapters

- **Anu Singha**, Phub Namgay, "Methodologies and Technologies to Retrieve Information From Text Sources" Book Chapter of "Modern Technologies for Big Data Classification and Clustering", IGI Global, ISSN: 2327-1981, 2017.
- **Anu Singha**, Jayanthi Ganapathi, "A Study and Analysis of Deep Neural Networks for Cancer Using Histopathology Images" Book Chapter of "AI-Enabled Multiple-Criteria Decision-Making Approaches for Healthcare Management", IGI Global, ISSN: 2327-1981, 2022.
- Jayanthi Ganapathi, **Anu Singha**, Medha R, Cheekireddy Dhamini, Rishikesh Swaminathan, "Analysis of Cardiac Dynamics and Assessment of Arrhythmia by Classifying Heartbeat Using Electrocardiogram" Book Chapter of "Concepts of Artificial Intelligence and its Application in Modern Healthcare Systems", CRC Press, Taylor & Francis Group, 2023. (Scopus Indexed) [In Press]
- **Anu Singha**, Joe Raj S Noel, R V Adhikrishna, Nived Suthahar, Abinesh S, and S Jaya Sakthi Poorni, "Fetal Health Status Prediction During Labor and Delivery Based on Cardiotocogram Data using Machine and Deep Learning" Book Chapter of "AI and Blockchain in Healthcare", Springer, 2023.

Awards and Achievements

- Junior Research Fellowship (JRF) + Senior Research Fellowship (SRF) under **Defence Research and Development Organisation (DRDO)** Sponsor Project, Govt. of India, June 2018 - December 2020.
- Awarded scholarship of full fee waiver by **SAU Financial Support (SAUFS) Scholarship**, South Asian University, August 2010 - June 2013 for pursuing MCA, which was granted on a need cum merit based system.

Workshops/Seminars/FDPs

- Completion of One week AICTE Recognized Faculty Development Program (FDP) On "**Open Source Technologies**" Organized by Dept. of CSE, NITTTR, Chandigarh, 24-April-2023 to 28-April-2023.
- Completion of One week AICTE Recognized Faculty Development Program (FDP) On "**Open Source Tools for Research**" Organized by Dept. of CSE, NITTTR, Chandigarh, 15-May-2023 to 19-May-2023.
- Completion of One week Faculty Development Program (FDP) On "**Emerging Trends and Applications of Machine Learning Based Artificial Intelligence**" Organized by Dept. of CSE, SRM Institute of Science and Technology, Delhi-NCR, Ghaziabad, 20-Feb-2023 to 25-Feb-2023.
- Completion of One week Faculty Development Program (FDP) On "**Amazon Web Services**" Organized by VIT, CHENNAI in collaboration with BRAINOVISION SOLUTIONS INDIA PVT.LTD & AICTE, Govt. of India, 22-Aug-2022 to 27-Aug-2022.
- Hands-on Workshop on '**Deep Learning**', Department of Computer Science & Engineering, Tripura University, India, 13-15 December, 2019.
- MHRD Initiative GIAN course on "**Contrast Enhancement in Poor Visibility**", Department of Computer Science and Engineering, Tripura University, 5-9th March, 2018.
- MHRD Initiative GIAN course on "**Image and Video Forensics**", Department of Computer Science and Engineering, Tripura University, 12-16th March, 2018.
- Workshop on '**Machine Learning and Applications (MA)**', Indian Statistical Institute (ISI), Kolkata and Department of Information Technology, Tripura University, 22-24 Feb, 2017.
- Workshop on "**Recent Advancement in Soft Computing Techniques**", Department of Mathematics, National Institute of Technology (NIT)-Agartala, 29-31 January, 2016.
- Workshop on '**Entrepreneurship Awareness Program**', National Institute of Technology (NIT), Agartala, 28th Jan, 2015.
- Workshop on '**Fundamentals of Image Analysis & Pattern Recognition**', Dept of CSE & Dept of IT, Tripura University, 6-8th Feb, 2015.
- Workshop on "**Computational Aspects of Inflammatory Pain Related Diseases**", Dept of CSE, Tripura University, November 20th, 2015.
- Author Workshop on '**Understanding the Books and Journal Article Publishing Process**', Elsevier in collaboration with Central Library, Tripura University, 26th Sept., 2014.
- Workshop on '**Activities of SAMEER in Emerging Fields of Computer and Electronics Science & Engineering**', Dept of CSE, Tripura University & SAMEER, IIT Bombay Campus, Pawai, Mumbai, 25th July, 2014.

- ISI-TU Winter school on '**Pattern Recognition and Image Processing**', Machine Intelligence Unit, Indian Statistical Institute (ISI), Kolkata and Department of Mathematics, Tripura University, March 25-29th, 2014.
- '**ACM Student Delhi-NCR Chapter**' Jawaharlal Nehru University (JNU), New Delhi, April 06, 2013.
- '**R Programming Training**', South Asian University (SAU), New Delhi, February 16-23, 2013.
- Workshop on '**Soft Computing Techniques**', South Asian University (SAU), New Delhi, September 6-7, 2012.
- '**IBM DB2 Training and Certification Programme**', South Asian University (SAU), New Delhi, August 21-24, 2012.
- Conference on "**International Conference on Big Data Analytics (BDA 2012)**", held at India International Centre, Lodhi Road, New Delhi, December 24-26, 2012.

Work Experience:

- Assistant Professor, Department of Computer Science and Engineering, SRM University, Delhi-NCR, Ghaziabad, India w.e.f. 01-December-2022 to till date.
- Assistant Professor, Faculty of Engineering and Technology, Sri Ramachandra University, Chennai, India w.e.f. 13-July-2021 to 30-November-2022.
- Guest Faculty, Department of Computer Science and Engineering, Tripura University (A Central University) w.e.f. 01-January-2021 to 15-July-2021.

Professional Memberships:

- ACM student membership 2011-2012