DR. ASHIM SAHA

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⋄ Associate Professor, Computer Science & Engineering

⋄ APJ Abdul Kalam Block, Room No: 221, NIT Agartala, Jirania Tripura (West) India, PIN-799046

EMPLOYMENT

Current Designation: Associate Professor, Computer Science & Engineering Dept.
Institute: National Institute of Technology, Agartala, India (Joined on 24-08-2011)
Institute Address: PO: NIT Agartala, Barjala, Jirania, Tripura (W), India 799046

EDUCATION

National Institute of Technology Agartala (Deemed University) *2017*
PhD (Engineering)
Department of Electronics and Communication Engineering

Tripura University (A Central University) *2011*
Master of Technology
Department of Computer Science Engineering

National Institute of Technology Agartala (Deemed University) *2009*
Bachelor of Engineering **(Gold Medalist)**
Department of Computer Science Engineering

Ranirbazar Vidyamandir (T.B.S.E) *2005*
Higher Secondary (+2)

Ranirbazar Vidyamandir (T.B.S.E) *2003*
Madhyamik (10th)

PHD THESIS

Title: "Studies of Soft Computing Techniques for Facial Expression Recognition"
Defence Date: May, 2017
Domain: Image Processing, Soft Computing,

PATENT

1. **Title:** AN ELECTRONIC SYSTEM FOR WRITING USING CONVENTIONAL ACCESSORIES
   Date of grant: Dec, 2019
   Status: Published

2. **Title:** PORTABLE DEVICE FOR IDENTIFICATION OF GLAUCOMA AT EARLY STAGE
   Date of filling: Dec, 2023
   Status: Granted (Indian)

3. **Title:** Wearable Health Monitoring and Rescue Device
   Date of filling: Jan, 2024
   Status: Granted (UK)

4. **Title:** BRAIN TUMOR DETECTION DEVICE USING HYBRID DEEP LEARNING
   Date of filling: Jan, 2026
   Status: Granted (Indian)

SPONSORED R&D PROJECT

1. **Title:** "Smart vision-based approach for monitoring motion behavior of senior citizens at indoor environments"
   Funding Agency: TEQIP - III
   Year: 2020

2. **Title:** "IoT based traffic monitoring system for North East India"
   Funding Agency: DST (ICPS Division)
   Year: 2019

3. **Title:** "Automated Facial Expression Recognition for Emotion Detection"
   Funding Agency: AICTE
   Year: 2012

SELECTED PUBLICATIONS

Journal Publication

1. Sandipan Bhowmick, **Ashim Saha**, Suman Deb, Anurag De, Ankit Srivastava, "Medical Image Classification Using Light weight Deep Spiking Neural Network", Iranian Journal of Science and Technology, (SCIE), (2025) Volume 67, Issue 02.

2. Tina Debbarma, Tannistha Pal, **Ashim Saha** and Nikhil Debbarna, "HCNNet: A hybrid convolutional neural network for abnormal human driver behaviour detection", Sadhana, (SCIE), (2025) Volume 50, Doi: https://doi.org/10.1007/s12046-024-02656-z

3. Sarmistha Majumder, Mrinal Kanti Deb Barma, and **Ashim Saha**, , "ARP spoofing detection using machine learning classifiers: an experimental study", Knowledge Information System , (SCIE), (2024) Volume 67, DOI: https://doi.org/10.1007/s10115-024-02219-y.

4. Joyeeta Goswami, Kaushal Kumar Prajapati, **Ashim Saha**, Apu Kumar Saha , "Parameter-efficient fine-tuning large language model approach for hospital discharge paper summarization", Applied Soft Computing, (SCIE), (2024) Volume 157, 111531, DOI: https://doi.org/10.1016/ j.asoc. 2024.111531.

5. Saluja, S., Trivedi, M.C, **Ashim Saha**, "Deep CNNs for glioma grading on conventional MRIs: Performance analysis, challenges, and future directions", Mathematical Biosciences and Engineering, (SCIE), (2024) Volume 21(4), pp. 5250–5282

6. Sanjoy Chakraborty, Apu Kumar Saha, Absalom E. Ezugwu, Ratul Chakraborty, **Ashim Saha**, "Horizontal crossover and co-operative hunting-based Whale Optimization Algorithm for feature selection, Knowledge-Based Systems, (SCIE), (2023) 282(4):111108, DOI: 10.1016/j.knosys.2023.111108.

7. Anurag De, **Ashim Saha**, Praveen Kumar, Gautam Pal "Fall detection method based on Spatio-temporal feature fusion using combined two channel classification", Multimedia Tools and Applications, Springer, (SCIE), (2022) https://doi.org/10.1007/s11042-022-11914-3.

8. Anurag De, **Ashim Saha**, Praveen Kumar, Gautam Pal "Fall detection approach based on combined two-channel body activity classification for innovative indoor environment", Journal of Ambient Intelligence and Humanized Computing, Springer, (SCIE), (2022) https://doi.org/10.1007/s12652-022-03714-2.

9. Sanjoy Chakraborty, Sushmita Sharma, Apu Kumar Saha, **Ashim Saha** "A novel improved whale optimization algorithm to solve numerical optimization and real-world applications", Artificial Intelligence Review, Springer, (SCI), (2021) https://doi.org/10.1007/s10462-021-10114-z.

10. Anurag De, **Ashim Saha**, Praveen Kumar "Fall detection approach based on combined displacement of spatial features for intelligent indoor surveillance", Multimedia Tools and Applications, Springer, (SCIE), (2022) https://doi.org/10.1007/s11042-021-11646-w.

11. **Ashim Saha** , Arundhati Das, "A Method For Tracking of Facial Action Points Using Pyramidal Lucas Kanade Algorithm for Expression Recognition", Journal of Multimedia Processing and Technologies, Vol 8 (2017), No. 4.

12. **Ashim Saha**, Sambhu Nath Pradhan, "Facial Expression Recognition based on Eigenspaces and Principle Component Analysis", International Journal of Computer Vision and Robotics. Volume 8 (2018), Issue 2, pp.190 – 200.

13. **Ashim Saha**, Mameeta Pukhrambam, Sambhu Nath Pradhan, "Facial Image Analysis for Expression Recognition by Bidimensional Empirical Mode Decomposition" Indian Journal of Science and Technology. Vol 9(31), DOI: 10.17485/ ijst/ 2016 /v9i31/ 90495, August 2016.

14. Anurag De, **Ashim Saha**, Dr. M.C Pal, "A Human Facial Expression Recognition Model based on Eigen Face Approach", Procedia of Computer Science Journal, (Elsevier) ISSN: 1877-0509, Volume 45, 2015.

15. **Ashim Saha**, Hillol Das, Nirmalya Kar, Dr. M C Pal, "An Approach of Extracting Facial Components for Facial Expression Detection using Fiducial Point Detection". International Journal of Computer Applications, Vol. 80(10), 2013. Published by Foundation of Computer Science, New York, USA.

Conference Publication

1. Srivastava, A., Chandra, M, **Ashim Saha**, Saluja, S., Bhati, D. "Current Advances in Locality-Based and Feature-Based Transformers: A Review". Published in **Springer** Lecture Notes in Networks and Systems 2024, 796, pp. 321–335.

2. Sandipan Bhowmick, **Ashim Saha** "Dealing With Data Imbalance In Speaker Accent Recognition Using Fuzzy kNN and IQR". International Conference On Intelligent Systems and Smart Infrastructure (ICISSI-2022), Published in **CRC Press, Taylor and Francis** (2023), eBook ISBN9781003357346, DOI: https://doi.org/10.1201/9781003357346 .

3. Sandipan Bhowmick, **Ashim Saha** "Enhancing The Performance of kNN For Glass identification Dataset Using Inverse Distance weight, ReliefF Ranking and SMOTE". International Conference on Innovative Computing, Informatics and Advanced Communication Systems (ICICIAC-2022), To be Published in AIP Conference Proceedings, 2023, 2754(1), 020021.

4. **Saha Ashim**, Sharma, T., Batra, H., Jain, A., Pal, V. "Human Action Recognition Using Smartphone Sensors". 2020 International Conference on Computational Performance Evaluation, (IEEE ISBN: 978-1-7281-6644-5) ComPE 2020, Published in **IEEE Explore**.

5. Akanksha Sharma, **Dr. Ashim Saha** "A Comparative Study of Different Approaches Used For Sentiment Analysis from Customer Reviews". International Conference on Computational Intelligence and IoT (ICCIIoT) 2018, Published by **Elsevier SSRN**.

6. Jyoti Raj, Amirul Hoque, **Dr. Ashim Saha** "Various Methodologies for Micro-Video Recommendation System: A Survey". International Conference on Computational Intelligence and IoT (ICCIIoT) 2018, Published by **Elsevier SSRN**.

7. Anurag De, **Ashim Saha**, " A Comparative Study on different approaches of Real Time Human Emotion Recognition based on Facial Expression Detection", IEEE International Conference on Advances in Computer Engineering and Applications, (IEEE ISBN: 978-1-4673-6910-7/15), India, 2015. (Published in **IEEE Xplore)**.

8. Arundhati Das, M. Pukhrambam, **Ashim Saha**, "Real-Time Robust Face Detection and Tracking using extended Haar functions and improved Boosting algorithm", IEEE International Conference on Green Computing and Internet of Things, (IEEE ISBN: 978-1-4673-7909-0), India, 2015. Published **in IEEE Xplore**.

9. M. Pukhrambam, Arundhati Das, **Ashim Saha**, "Facial Components Extraction and Expression Recognition in Static images", IEEE International Conference on Green Computing and Internet of Things,(IEEE ISBN: 978-1-4673-7909-0), India, 2015. Published in **IEEE Xplore**.

10. **Ashim Saha**, Anurag De, Dr.M.C Pal, Nirmalya Kar, "Different techniques of Automatic Facial Expression Recognition: A Survey", 2nd International Conference on Advances in Computing, Communication and Information Technology (CCIT-2014) held at Birmingham University, UK, ISBN: 978-1-63248-005-7, Seek Digital Library, pp. 45-49.

11. **Ashim Saha**, Nirmalya Kar, Dr. M.C. Pal, "An Approach Towards Facial Expression Recognition Based on Fuzzy Logic Principles and Facial Animation Parameters", Elsevier 7th International Conference on Image and Signal Processing, India, 2013, ISBN: 978-93-5107-106-8, Published by **Elsevier Science and Technology Publication**.

12. Nirmalya Kar, Sharmistha Roy, **Ashim Saha** "A Biometric Based Design Pattern for Implementation of a Security Conscious E-Voting System using Cryptographic Protocols". Accepted in Second International Conference on Advances in Information Technology and Mobile Communication – AIM 2012. Bangalore, India, April 2012. To be published by **Springer**

13. Nirmalya Kar, Mrinal Kanti Debbarma, **Ashim Saha** And Dwijen Rudrapal , "FACEIT : An Systematic Approach For Student Attendance System Using Face Recognition". Accepted in International Conference on Communication and Broadband Networking (ICCBN 2012), Bangkok, Thailand, May 2012.

14. Dwijen Rudrapal, Smita Das, **Ashim Saha**, Lalita Lumari, N. Debbarma "A Study And Analysis Of Keystroke Dynamics And Its Enhancement For Proficient User Authentication." Accepted for 4th International Conference on Electronics Computer Technology (ICECT 2012), April 6-8 2012, in Kanyakumari, India. Published in **IEEE Xplore**.

15. Mrinal Kanti Debbarma, Nirmalya Kar and **Ashim Saha** "Static and Dynamic Software Metric Analysis for Regression Testing" IEEE International Conference on Computer and Informatics.Vol-2, pp 1-6, Jan 2012. Published in **IEEE Xplore**

Book Chapter

1. Amirul Hoque, Jyoti Raj, **AshimSaha**, and Paritosh Bhattacharya " Earthquake Magnitude Prediction Using Machine Learning Technique" ,Trends in ComputationalIntelligence, Security and Internet of Things, , CCIS 1358.Springer,. (2021), Print ISBN 978-3-030-66763-4.

2. Joyeeta Goswami and **Ashim Saha** "IoT Sensor Network Based Implementation for Rainfall Induced Landslide Monitoring",Trends in Computational Intelligence, Security and Internet of Things, CCIS 1358.Springer,. (2021), Print ISBN 978-3-030-66763-4.

3. Joyeeta Goswami and **Ashim Saha** "Adoption of IoT in Vehicular Traffic Control: An Overview",Electronic Systems and Intelligent Computing, LNEE, volume 686, Springer, (2020), Print ISBN 978-981-15-7031-5.

4. Anurag De, **Ashim Saha**, Praveen Kumar "Role of Open Hardware and IoT in Home Automation: A case study", Advances in Computational Intelligence, Security & Internet of Things, CCIS 1192. **Springer**, Singapore. (2020), Print ISBN: 978-981-15-3665-6

5. Tapajyoti Deb, Niti Vishwas, **Ashim Saha** "Statistical Analysis of Road Accident Data of UK using Operational Intelligence Tool - Splunk", Advances in Computational Intelligence, Security & Internet of Things, CCIS 1192. **Springer**, Singapore. (2020), Print ISBN: 978-981-15-3665-6

6. Monika Dey, **Ashim Saha**, Anurag De "Object Detection using Point Feature matching based on SURF algorithm", Advances in Computational Intelligence, Security & Internet of Things, CCIS 1192. **Springer**, Singapore. (2020), Print ISBN: 978-981-15-3665-6

7. Tapajyoti Deb, Niti Vishwas, **Dr. Ashim Saha** "A Comparative Study on Different Approaches of Road Traffic Optimization Based on Big Data Analytics", Performance Management of Integrated Systems and its Applications in Software Engineering. Asset Analytics. **Springer**, Singapore. (2019), Print ISBN 978-981-13-8252-9

8. Niti Vishwas, Tapajyoti Deb, **Dr. Ashim Saha** "Implementation of Collaborative Filtering for Product Recommendation in E-commerce", Performance Management of Integrated Systems and its Applications in Software Engineering. Asset Analytics. **Springer**, Singapore. (2019), Print ISBN 978-981-13-8252-9

9. Mrinal Kanti Bhowmik, Kankan Saha, Sharmistha Majumder, Goutam Majumder, **Ashim Saha**, Aniruddha Nath Sarma, Debotosh Bhattacharjee, Dipak Kumar Basu and Mita Nasipuri "Thermal

Infrared Face Recognition – a Biometric Identification Technique for Robust Security system" ISBN 978-953-307-368-2 , **InTech - Open Access Publisher, Croatia.**

BOOK EDITED

1. Nirmalya Kar, **Ashim Saha**, Suman Deb **"Trends in Computational Intelligence, Security & Internet of Things"**, CCIS 1358. **Springer,** Singapore. (2021), Print ISBN: 978-3-030-66762-7

2. **Ashim Saha**, Nirmalya Kar, Suman Deb **"Advances in Computational Intelligence, Security & Internet of Things"**, CCIS 1192. **Springer,** Singapore. (2020), Print ISBN: 978-981-15-3665-6

3. Nirmalya Kar,**Ashim Saha**, Mrinal Kanti Debbarma **"Biometric Based Attendance System"**, **Lambert Academic Publisher,** Print ISBN: 978-3-8454-1957-2

WORKSHOP & INTERNATIONAL CONFERENCE CONDUCTED

1. Conducted **"3rd International Conference on Computational Intelligence, Security & IoT (ICCISIoT) 2020"** during 29th -30th December 2020.

2. Conducted **"2nd International Conference on Computational Intelligence, Security & IoT (ICCISIoT) 2019"** during 13th -14th December 2019.

3. Conducted **"1st International Conference on Computational Intelligence & IoT (ICCI-IoT) 2018"** during 14th -15th December 2018.

4. Conducted 1 week AICTE- ATAL workshop on **"Internet of Things"** during 26th – 30th August 2019.

5. Conducted 1 week AICTE- ATAL workshop on **"ROBOTICS"** during 17th – 21st June 2019.

6. Conducted 1 week AICTE- ATAL workshop on **"Artificial Intelligence (AI)"** during 22nd – 26th Feb 2019.

7. Conducted 5 Days FDP on **"High Performance Computing"** during 29th Oct – 2nd Nov 2018.

8. Conducted 1 week GIAN Course on **"Designing smart cities based on IoT"** during 11th - 15th Dec 2017.

9. Conducted 1 week GIAN Course on **"IOT SENSORS, DEVICES AND DATA ANALYTICS"** during 8th - 12th August 2016.

10. Conducted Two Day National workshop on **"Android App Development"** on 10-11 March 2016 at NIT Agartala.

11. Conducted One Day Workshop on **"Intel HPC Code Modernization (Parallelization)"** in collaboration with Wipro on 6th Aug 2015.

12. Conducted Two-Week ISTE Workshop on **"Cyber Security"** during 10TH – 20th JULY, 2014.

13. Conducted Two days National Workshop on **"MATLAB and Its Application in Digital Image Processing and Pattern Recognition"** during 29th & 30th November, 2013 sponsored by TEQIP.

ADMINISTRATIVE RESPONSIBILITIES

1. Coordinator, IIIT Agartala Since 7th January 2020

2. Chairman, Computing & ICT Unit, NIT Agartala

3. Chairman Nominee, KV NIT Agartala ICT equipment Purchase,

4. Institute Nodal Officer, NKN.

5. Faculty in-charge, Virtual Classroom.

6. Technical Committee Member of CCMT & CCMN 2025 conducted by NIT Warangal,

7. Chairman, Institute ICT Component Specification Committee,

8. Associate Dean (R&C) from 02-01-2013 to 12-03-2018.

9. Deputy Center Incharge NIMCET 2019, NIMCET 2020, NIMCET 2021.

10. Member, ACoFAR, NIT Agartala since 06-06-2019.

11. Joint Secratory, NIMCET 2015.

12. Institute Nodal Officer for All India Survey of Higher Education (AISHE) w.e.f. 05-08-2014 to till date.

13. Institute Nodal Officer for Digital India program.

14. Institute Nodal Officer for E-office implementation.

15. Institute Nodal Officer for VIDWAN expert database.

16. Member, Industry Institute Interaction Cell, NIT Agartala

17. Established Multimedia and Web Technology Laboratory in CSE Dept. at A.P.J. Abdul Kalam Block of NIT Agartala in the academic session 2015-16.

18. Faculty in-charge, MMWT Lab, CSE Dept.

19. UG Coordinator, CSE Dept., from 01-01-2013 to 06-01-2014,

20. Member Secretory, DUPC, CSE Dept., session 2013-2014

21. Member, CSE Dept. Purchase Committee.

THESIS / PROJECT GUIDED

1. **Ph.D** : 04 (Awarded); 04 (Ongoing)

2. **M.Tech** : 20+

3. **MCA** : 15+

4. **B.Tech** : 40+

COUNTRY VISITED

1. **Total Country Visited** : 16

AWARDS/DISTINCTIONS

Received Gold medal (1st class with distinction) in Bachelor of Engineering degree

TECHNOLOGY DEVELOPMENT/TRANSLATION/INITIATION

Developed web portal and Android App for All India NIT MCA entrance test (NIMCET) and counselling process for all the participating institute for admission in MCA course for the academic session 2014-15 and 2015-16.

PROFESSIONAL CONNECTION

1. Member, **IEEE**,

2. Member, **IEI**,

3. Member, **IAENG**,

4. Member, **CSTA**,

DECLARATION

I declare that the above furnished details are true to the best of my knowledge and belief.

Date:
Place: NIT Agartala   Dr. Ashim Saha