Dr. Md. Abdur Rahim

Professor & *Chairman*, Dept. of Computer Science and Engineering, Pabna University of Science and Technology, Pabna, Bangladesh.

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Areas of interest

Human-computer interaction; Computer Vision and Image Processing; Pattern Recognition; Machine Intelligence, Non-Touch Interfaces; Human Gesture Recognition; User Authentication, ADHD and Parkinson's Disease diagnosis, as well as handwriting analysis, recognition, and synthesis.

Education

2020	Ph.D. in Computer Science and Engineering, The University of Aizu, Aizuwakamatsu, Fukushima, Japan.
2009	MSc in Computer Science and Engineering with First Class Second Position, GPA conversion: 3.95 (Out of 4.00 Scale) from University of Rajshahi, Rajshahi-6205, Bangladesh.
2008	BSc(Honours) in Computer Science and Engineering with First Class Second Position, CGPA conversion: 3.82 (Out of 4.00 Scale) from University of Rajshahi, Rajshahi-6205, Bangladesh.
2004	Higher Secondary Certificate (HSC) in Science with GPA: 4.90 (out of 5.00) from Bhurungamari Degree College, Bhurungamari, Kurigram, Bangladesh.
2002	Secondary School Certificate (SSC) in Science with GPA: 4.38 (without 4th subject out of 5.00) from Bhurungamari Pilot High School, Bhurungamari, Kurigram, Bangladesh.

Ph.D. Dissertation

Title: Hand Gesture-based Non-touch Interface for Human-Computer Interaction Using Machine Learning Techniques

M.Sc. Thesis

Title: Face recognition using local binary patterns (LBP)

Undergraduate (B.Sc. Honours) Thesis

Title: Visual Recognition of Bengali Sign Language using Artificial Neural Network

Publications

Journal articles (50)

2025 Abu Saleh Musa Miah, Md Mahbubur Rahman Tusher, Md. Moazzem Hossain, Md Mamun Hossain, Md Abdur Rahim, Md Ekramul Hamid, Md. Saiful Islam, Jungpil Shin, "ChatGPT in Research and Education: A SWOT Analysis of Its Academic Impact", CMES-Computer Modeling in Engineering Sciences, Publication Date: 2025-06-11.
DOI:https://doi.org/10.32604/cmes.2025.064168

2025 Paul, Subrata Kumer, Abu Saleh Musa Miah, Rakhi Rani Paul, Md Ekramul Hamid, Jungpil Shin, and Md Abdur Rahim. "IoT-Based Real-Time Medical-Related Human Activity Recognition Using Skeletons and Multi-Stage Deep Learning for Healthcare." CMC-Computers, Materials Continuan-, Publication Date: 2025-06-09,
DOI:https://doi.org/10.32604/cmc.2025.063563

2024 Md ABDUR RAHIM, JUNGPIL SHIN*, Md. ABUL HASHEM, HEMEL SHARKER AKASH, Md. IMRAN HOSSAIN, Md. NAJMUL HOSSAIN, ABU SALEH MUSA MIAH, "ADVANCED TOUCHLESS HCI: A GESTURE RECOGNITION-BASED MULTILINGUAL VIRTUAL KEYBOARD FOR CHARACTER INPUT," Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/ Journal of Tianjin University Science and Technology, ISSN (Online):0493-2137, E-Publication: Online Open Access, Vol: 57 Issue: 11:2024,
DOI:https://doi.org/10.5281/zenodo.14039789

2024 Akash, Hemel Sharker, Md Abdur Rahim, Abu Saleh Musa Miah, Hyoun-Sup Lee, Si-Woong Jang, and Jungpil Shin. 2024. "Two-Stream Modality-Based Deep Learning Approach for Enhanced Two-Person Human Interaction Recognition in Videos" Sensors 24, no. 21: 7077.
DOI:https://doi.org/10.3390/s24217077

2024   Hossain, Md Imaran, Shoaib Ahmad, Sakib Hasan, Md Abdur Rahim, and Jungpil Shin. "Lung cancer detection and classification using LeNet-LSTM model on computed tomography images." Multidisciplinary Science Journal 7, no. 4 (2025): 2025188-2025188.
DOI:

2024   Md. Zahin Muntaqim; Tangin Amir Smrity; Abu Saleh Musa Miah; Hasan Muhammad Kafi; Taosin Tamanna; Fahmid Al Farid, Md Abdur Rahim, Hezerul Abdul Karim,Sarina Mansor "Eye Disease Detection Enhancement Using a Multi-Stage Deep Learning Approach," in IEEE Access.
DOI:10.1109/ACCESS.2024.3476412

2024   Md Abdur Rahim, Abu Saleh Musa Miah, Hemel Sharker Akash, Jungpil Shin, Md Imran Hossain, Md Najmul Hossain, "An Advanced Deep Learning Based Three-Stream Hybrid Model for Dynamic Hand Gesture Recognition", arXiv preprint arXiv:2408.08035
DOI:

2024   Jungpil Shin, Abu Saleh Musa Miah, Md Humaun Kabir, Md Abdur Rahim, Abdullah Al Shiam, "A Methodological and Structural Review of Hand Gesture Recognition Across Diverse Data Modalities", IEEE Access,
DOI:10.1109/ACCESS.2024.3456436

2024   Hossain, M. N., Shimamura, T., Kamal, S. T., Rahim, M. A., Ali, M. S., Ullah, S. E. (2024). Waveform Design and Nonlinear Sensitivity Analysis of WR-OCDM System for B5G Wireless Communications. Multidisciplinary Science Journal, (Accepted Articles).
Retrieved from:https://malque.pub/ojs/index.php/msj/article/view/4616

2024   Hossain, Md Imran, Shoaib Ahmad, Sakib Hasan, Md Abdur Rahim, and Jungpil Shin. "Lung cancer detection and classification using LeNet-LSTM model on computed tomography images." Multidisciplinary Science Journal Accepted Articles (2024).
DOI:

2024   Tusher, Md Mahbubur Rahman, Fahmid Al Farid, Md Al-Hasan, Abu Saleh Musa Miah, Susmita Roy Rinky, Mehedi Hasan Jim, Sarina Mansor, Md Abdur Rahim, and Hezerul Abdul Karim. "Development of a Lightweight Model for Handwritten Dataset Recognition: Bangladeshi City Names in Bangla Script." Computers, Materials and Continua 80, no. 2 (2024): 2633-2656.
DOI:10.32604/cmc.2024.049296

2024   Kamal, SK Tamanna, Fowzia Jabin, Shaikh Enayet Ullah, Umme Salma Jahan, Md Najmul Hossain, Md Abdur Rahim, Fahmid Al Farid, and Sarina Mansor.

"Performance Analysis of Multiuser mmWave DCT-Spread CP-Less OFDM Communication System." Multidisciplinary Science Journal Accepted Articles (2024).
DOI:

2024   Roshid, Md Mamunur, Md Nur Alam, Onur Alp İlhan, **Md Abdur Rahim**, Md Mehedi Hassen Tuhin, and M. M. Rahman. "Modulation instability and comparative observation of the effect of fractional parameters on new optical soliton solutions of the paraxial wave model." Optical and Quantum Electronics 56, no. 6 (2024): 1010.
DOI:https://doi.org/10.1007/s11082-024-06921-7

2024   Podder, Nitun Kumar, Humayan Kabir Rana, Arpa Kar Puza, Md Imam Hasan, Shudeb Babu Sen Omit, Pintu Chandra Shill, **Md Abdur Rahim**, Rittika Shamsuddin, Bidhan Chandra Podder, and Md Habibur Rahman. "Interplay of Machine Learning and Bioinformatics Approaches to Identify Genetic Biomarkers that Affect Survival of Patients with Glioblastoma." Informatics in Medicine Unlocked (2024): 101505.
DOI:https://doi.org/10.1016/j.imu.2024.101505

2024   **Md Abdur Rahim**, Fahmid Al Farid, Abu SalehMusaMiah, Arpa Kar Puza, Md Nur Alam, Md Najmul Hossain, and Hezerul Abdul Karim. "An Enhanced Hybrid Model Based on CNN and BiLSTM for Identifying Individuals via Handwriting Analysis." CMES-Computer Modeling in Engineering Sciences 140, no. 2 (2024).
DOI:https://doi.org/10.32604/cmes.2024.048714

2024   Tahmid Hasan, **Md Abdur Rahim**, Jungpil Shin, Satoshi Nishimura, Md. Najmul Hossain," Dynamics of Digital Pen-Tablet: Handwriting Analysis for Person Identification Using Machine and Deep Learning Techniques", IEEE Access, 2024. [Accepted: under-processing for publication]
DOI:10.1109/ACCESS.2024.3352070

2024   Bijon Mallik, **Md Abdur Rahim**, Abu Saleh Musa Miah , Keun Soo Yun, and Jungpil Shin, "Virtual Keyboard: A Real-Time Hand Gesture Recognition-Based Character Input System Using LSTM and Mediapipe Holistic", Computer Systems Science and Engineering, pp. 1-17, DOI: 10.32604/csse.2023.045981 [Accepted: under-processing for publication]
DOI:10.32604/csse.2023.045981

2024   Md Imran Hossain, **Md Abdur Rahim** and Md. Najmul Hossain, "Single-Channel Speech Separation Based on double-density dual-tree CWT and SNMF", Annals of Emerging Technologies in Computing (AETiC), Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 1-13, Vol. 8, No. 1, 1st January 2024, Pub-

lished by International Association of Educators and Researchers (IAER), Available: http://aetic.theiaer.org/archive/v8/v8n1/p1.html
DOI:10.33166/AETiC.2022.03.001

2023   Md. Najmul Hossain, Al Amin Islam, **Md Abdur Rahim**, Md. Imran Hossain, and Arifour Rahman, "Design and Performance Analysis of Defected Ground Slotted Patch Antenna for Sub-6 GHz 5G Applications", Journal of Engineering Advancements, Vol. 04(04) 2023, pp. 130–140, December 31, 2023.
DOI:https://doi.org/10.38032/jea.2023.04.004

2023   Md Nur Alam, Md Abdur Rahim, Md Najmul Hossain, and Cemil Tunç. "Dynamics of Damped and Undamped Wave Natures of the Fractional Kraenkel-Manna-Merle System in Ferromagnetic Materials."J. Appl. Comput. Mech., xx(x) (2024) 1-13, 2023
DOI:10.22055/jacm.2023.45064.4307

2023   M. N. Hossain, H. A. Mamun, M. S. Islam, L. C. P., **Md Abdur Rahim**, M.M. Islam, M. A. Islam, M. A. Rahman, "Challenges and Possible Solutions of Implementing 5G Mobile Networks in Bangladesh", Mobile Information Systems, Volume 2023, Article ID 9586126, 14 pages, 5 December 2023.
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2023   Md. Najmul Hossain, Al Amin Islam, Jungpil Shin, **Md Abdur Rahim**, Md. Humayun Kabir, "Performance Evaluation of Slotted Star-Shaped Dual-band Patch Antenna for Satellite Communication and 5G Services," I.J. Wireless and Microwave Technologies, 2023, 3, 49–63, published online on June 8, 2023, by MECS.
DOI:10.5815/ijwmt.2023.03.05

2023   Paul, Liton Chandra, Akash Majumder, Tithi Rani, Najmul Hossain, **Md Abdur Rahim**, Jungpil Shin, and Keun Soo Yun. "Design and Analysis of a UWB Slotted Vivaldi Antenna for Microwave Imaging Applications." IEIE Transactions on Smart Processing Computing 12, no. 4 (2023): 350-357.
DOI:https://doi.org/10.5573/IEIESPC.2023.12.4.350

2023   **Md Abdur Rahim**, Md Alfaz Hossain, Md Najmul Hossain, Jungpil Shin and Keun Soo Yun, "Stacked Ensemble-Based Diabetes Type-2 Prediction Using Machine Learning Techniques", Annals of Emerging Technologies in Computing (AETiC), Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 30-39, Vol. 7, No. 1, 1st January 2023, Published by International Association for Educators and Researchers (IAER), DOI: 10.33166/AETiC.2023.01.003, Available: http://aetic.theiaer.org/archive/v7/v7n1/p3.html.
DOI:http://aetic.theiaer.org/archive/v7/v7n1/p3.html

2022   Abu Saleh Musa Miah, Jungpil Shin, Md. Al Mehedi Hasan, **Md Abdur Rahim**, and Yuichi Okuyama, "Rotation, Translation and Scale-Invariant Sign Word Recognition Using Efficient Segmentation and Deep Learning", Computer Systems Science and Engineering, Vol.44, No.3, 2023, pp.2521-2536.
DOI:10.32604/csse.2023.029336

2022   Md. Najmul Hossain, Liton Chandra Paul, **Md Abdur Rahim**, and Jungpil Shin, "Multiband Slotted Crescent-shaped Patch Antenna for K-band Satellite and mmWave Communications", IEIE Transactions on Smart Processing and Computing, vol. 11, no. 3, June 2022.
Available:https://doi.org/10.5573/IEIESPC.2022.11.3.213

2022   Md Nur Alam, Onur Alp İlhan, Md. Sabur Uddin, and **Md Abdur Rahim**, "Regarding on the Results for the Fractional Clannish Random Walker's Parabolic Equation and the Nonlinear Fractional Cahn-Allen Equation", Advances in Mathematical Physics, vol. 2022, Article ID 5635514, 12 pages, 2022. Available:https://doi.org/10.1155/2022/5635514

2022   Abu Saleh Musa Miah, Jungpil Shin, Md. Al Mehedi Hasan, and **Md Abdur Rahim**, "BenSignNet: Bengali Sign Language Alphabet Recognition using Concatenated Segmentation and Convolutional Neural Network", Appl. Sci. 2022, 12(8), 3933. Available:https://doi.org/10.3390/app12083933

2022   **Md Abdur Rahim**,Jungpil Shin, Keun Soo Yun, Soft Voting-based Ensemble Model for Bengali Sign Gesture Recognition", Annals of Emerging Technologies in Computing (AETiC), Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 41-49, Vol. 6, No. 2, 1st April 2022, Published by International Association for Educators and Researchers (IAER).
Available:10.33166/AETiC.2022.02.003

2021   Hijaz Ahmad, Nur Alam, **Md Abdur Rahim**, Maged F Alotaibi, Mohamed Omri, The unified technique for the nonlinear time-fractional model with the beta-derivative. Results in Physics. 2021 Sep 11:104785.
Available:https://doi.org/10.1016/j.rinp.2021.104785

2020   Abu Saleh Musa Miah, **Md Abdur Rahim**, and Jungpil Shin, "Motor-Imagery Classification Using Riemannian Geometry with Median Absolute Deviation." Electronics (MDPI), Vol. 9, Issue. 10, p.1584, September, 2020. ISSN 2079-9292; CODEN: ELECGJ. **SCIE Indexed**
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2020   **Md Abdur Rahim**, Jungpil Shin and Keun Soo Yun, "Hand Gesture-based Sign Alphabet Recognition and Sentence Interpretation using a Convolutional Neural Network", Annals of Emerging Technologies in Computing (AETiC),

Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 19-26, Vol. 4, No. 4, 1st October 2020, Published by International Association of Educators and Researchers (IAER), DOI: 10.33166/AETiC.2020.04.003. **Scopus Indexed** Available:http://aetic.theiaer.org/archive/v4/v4n4/p3.html

2020   **Md Abdur Rahim**, Jungpil Shin, "Hand Movement Activity-Based Character Input System on a Virtual Keyboard," *Electronics*, 2020, 9(5), 774. **SCIE Indexed**.
DOI:https://doi.org/10.3390/electronics9050774

2020   **Md Abdur Rahim**, Jungpil Shin, Md Rashedul Islam, "Hand Gesture Recognition-Based Non-Touch Character Writing System on a Virtual Keyboard," *Multimedia Tools And Applications.*, 1-24. **SCIE Indexed**.
DOI:https://doi.org/10.1007/s11042-019-08448-6

2019   Jungpil Shin, **Md Abdur Rahim**, Md Rashedul Islam, and Keun Soo Yun, "A Novel Approach of Cursive Signature Generation for Personal Identity," *International Journal of Computer Applications in Technology.*, Vol. 62, No. 4, pp. 384-394, May, 2020.
DOI:https://doi.org/10.1504/IJCAT.2020.10029607

2019   **Md Abdur Rahim**, Jungpil Shin, and Md Rashedul Islam, "Gestural flick input-based non-touch interface for character input," *The Visual Computer.* 2019:1-4.
DOI:https://doi.org/10.1007/s00371-019-01758-8

2019   **Md Abdur Rahim**, Md Rashedul Islam, Jungpil Shin, "Non-Touch Sign Word Recognition Based on Dynamic Hand Gesture Using Hybrid Segmentation and CNN Feature Fusion," *Applied Sciences.* 2019, 9(18), 3790. **SCIE Index**.
DOI: https://doi.org/10.3390/app9183790

2019   Jungpil Shin, **Md Abdur Rahim**, Won-Du Chang, "Learning System for Japanese Kanji Calligraphy with Computerized Supervision," *Symmetry.* 2019, 11, 1071. **SCIE Indexed**.
DOI: https://doi.org/10.3390/sym11091071

2019   Jungpil Shin, Md Rashedul Islam, **Md Abdur Rahim**, and Hyung-Jin Mun, "Arm movement activity based user authentication in P2P systems," *Peer-to-Peer Networking and Applications.* pp.1-12, 2019. **SCIE Indexed**.
DOI: https://doi.org/10.1007/s12083-019-00775-7

2019   Jungpil Shin, Cheol Min Kim, **Md Abdur Rahim**, "Simulating oriental brush character considered with aerial action of pen tablet", *Multimedia Tools and Applications.* pp. 1-19, 2019. **SCIE Indexed**.
DOI: https://doi.org/10.1007/s11042-019-7287-z

2018   Jungpil Shin, **Md Abdur Rahim**, and Keun Soo Yun, "Panoramic Image Stitching with Efficient Brightness Fusion Using RANSAC Algorithm," *International Journal of Engineering & Technology,* vol. 7, no 3.34, pp. 267-272, 2018. **Scopus Indexed**.
DOI: https://doi.org/10.14419/ijet.v7i3.34.18981

2015   Md. Khaled Ben Islam, Julia Rahman, Md. Al Mehedi Hasan, and **Md Abdur Rahim**, "Protein Function Prediction Using Hypergeometric Distance with Background Frequency from Protein-Protein Interaction Network," *International Journal of Computational Bioinformatics and in Silico Modeling,* vol. 4 no. 3, pp. 667-672, 2015.

2015   Md. Niaz Imtiaz, **Md Abdur Rahim**, "An Improved Energy Efficient Optimized Link-State Routing Protocol for Mobile Ad-hoc Sensor Networks," *International Journal of Information Technology and Electrical Engineering (ITEE Journal),* vol. 4 no. 4, Aug 2015.

2014   **Md Abdur Rahim**, Tanzillah Wahid, and Md. Khaled Ben Islam, "Visual Recognition of Bengali Sign Language using Artificial Neural Network," *International Journal of Computer Applications,* vol. 94 no. 17, pp. 0975-8887, May 2014.

2014   Iffat Ara, Md. Najmul Hossain, and **Md Abdur Rahim**, "ECG Signal Analysis Using Wavelet Transform," *International Journal of Scientific & Engineering Research,* vol. 5, no. 5, May-2014.

2014   Pronab Kumar Mondal, Uzzal Kumar Prodhan, Md. Selim Al Mamun, **Md Abdur Rahim**, Kazi Kamal Hossain,"Segmentation of White Blood Cells Using Fuzzy C Means Segmentation Algorithm," *IOSR Journal of Computer Engineering (IOSR-JCE),* vol. 1 no. 9, pp. 466-470, 2013.

2013   **Md Abdur Rahim**, Md. Najmul Hossain,Tanzillah Wahid and Md. Shafiul Azam, "Face Recognition using Local Binary Patterns (LBP)," *Global Journal of Computer Science and Technology,* vol. XIII, no. IV, 2013.

2013   Md. Najmul Hossain, **Md Abdur Rahim**, Md. Rashedul Islam, Md. Shafiul Azam, "Performance Analysis of Nash and Power Balancing Algorithms for SIR-Based Power Control in CDMA Networks," *International Journal of Scientific & Engineering Research,* vol. 4 no. 5, May 2013.

2013   Md. Najmul Hossain, **Md Abdur Rahim**, Iffa Ara, "SIR-Based Power Control Algorithms in CDMA Networks." *Global Journal of Computer Science and Technology*, vol. 13, Issue. 10, 2013.

2013   Md. Rashedul Islam, Md. Babul Islam , Md. Firoz Ahmed , Md. Najmul Hossain, **Md Abdur Rahim**,"MEL-LP BASED GENERALIZED CEPSTRAL ANALYSIS FOR NOISY SPEECH RECOGNITION USING HMM," *In-

ternational Journal of scientific research and management (IJSRM), vol. 1 no. 9, pp. 466-470, 2013.

International conferences (22)

2025 Md. Tahidul Islam, **Md. Abdur Rahim**, Abu Saleh Musa Miah, Md. Imran Hossain, Md. Shafiul Azam, "Breast Cancer Detection via Advanced Deep Learning Networks," *Undergraduate Conference on Intelligent Computing and Systems (UCICS 2025)*, 26-27 February 2025; Varendra University, Rajshahi, Bangladesh.

2025 Mitu Rani Kundu, Md. Imran Hossain, Md. Rashed, **Md. Abdur Rahim**, Sumayta Shama, " Continuous Cuffless Blood Pressure Monitoring with Deep-Learning Techniques Utilizing PPG and ECG Features." *Undergraduate Conference on Intelligent Computing and Systems (UCICS 2025)*, 26-27 February 2025; Varendra University, Rajshahi, Bangladesh.

2025 Shahriar Shddique Arjon, Tamanna Yasmin, Ankur Kumar Mondol, Pabitra Kumar Biswas, Shabbir Mahmood, **Md. Abdur Rahim**, "Deep Learning-based Classification of Real and Fake Face Images Using Convolutional Neural Networks," *Undergraduate Conference on Intelligent Computing and Systems (UCICS 2025)*, 26-27 February 2025; Varendra University, Rajshahi, Bangladesh.

2025 Md Anwarul Islam Himel, Md. Bayazid Hossain, **Md. Abdur Rahim**, Shabbir Mahmood, Abu Saleh Musa Miah, Md. Imran Hossain, "Hybrid Model-based Bangla Sign Language Recognition Using Machine Learning and Deep Transfer Learning Techniques," *Undergraduate Conference on Intelligent Computing and Systems (UCICS 2025)*, 26-27 February 2025; Varendra University, Rajshahi, Bangladesh.

2025 Md. Bayazid Hossain, Md. Anwarul Islam Himel, **Md. Abdur Rahim**, Shabbir Mahmood, Abu Saleh Musa Miah, Jungpil Shin, "Classification of ADHD and Healthy Children Using Multi-Band and Spatial Features of Electroencephalography", *Undergraduate Conferenceon Intelligent Computing and Systems(UCICS 2025)*, 26-27 February, 2025; Varendra University, Rajshahi, Bangladesh.

2024 Md. Shariful Islam, **Md Abdur Rahim**, Nitun Kumar Podder, Md. Najmul Hossain, Md Imran Hossain, "Prediction of Irregular Bangladesh-EU Migration Trends Using Machine Learning Techniques", *International Conference on Advancement in Electrical and Electronic Engineering* 2024 (ICAEEE 2024) *Corresponding author (Md. Abdur Rahim)

2023 Hemel Sharker Akash, **Md Abdur Rahim**, Abu Saleh Musa Miah, Yuichi Okuyama, Yoichi Tomioka and Jungpil Shin, "Generalized Technique for Potato Leaves Disease Classification using Convolutional Neural Network", *in 8th International Conference on ICT for Sustainable Development,*, August 3rd -4th, 2023, Goa, India.

2023 M. S. Rana, N. K. Podder, H. K. Rana, M. I. Hasan, M. S. Azam, **M. A. Rahim**, SM H. S. Iqbal, S. Saha, "Identification of Genomic Associations Between Parkinson's and Neurodegenerative Diseases Using Bioinformatics Models", *In Inter-*

national Conference on Electrical, Computer and Communication Engineering (EECE), Feb. 23-25, 2023, Chittagong, Bangladesh.

2022 N. K. Podder, A. K. Puza, H. K. Rana, B. C. Podder, M. H. Sumon, N. J Rinvi, **M. A. Rahim** and P. C. Shill, "Identification of Influential Genes and Comorbidities of Colorectal Cancer," 2022 International Conference on Recent Progresses in Science, Engineering and Technology (ICRPSET) 2022.

2020 Jungpil Shin, **Md Abdur Rahim**, Okuyama Yuichi, Yoichi Tomioka, "Deep Learning-based Hand Pose Estimation from 2D Image," *In 2020 3rd IEEE International Conference on Knowledge Innovation and Invention (ICKII)* 2020 Aug 21 (pp. 108-110). IEEE.
DOI: 10.1109/ICKII50300.2020.9318917

2020 **Md Abdur Rahim**, Miah AS, Sayeed A, Shin J. Hand Gesture Recognition Based on Optimal Segmentation in Human-Computer Interaction. In2020 3rd IEEE International Conference on Knowledge Innovation and Invention (ICKII) 2020 Aug 21 (pp. 163-166). IEEE.
DOI: 10.1109/ICKII50300.2020.9318870

2020 Jungpil Shin, **Md Abdur Rahim**, "Handedness Detection Based on Drawing Patterns using Machine Learning Techniques," *The Thirteenth International Conference on Advances in Computer-Human Interactions (ACHI2020)*, pp. 68-71, March, 2020.

2020 **Md Abdur Rahim**, Md Rashedul Islam, Ui-Pil Chong, Jungpil Shin, "Hand movement activity-based approach for virtual keyboard input," *3rd Eurasian Conference on Educational Innovation 2020 (ECEI 2020)*, February 5-7, 2020, Hanoi, Vietnam. **[Best Conference Paper Award]**

2019 **Md Abdur Rahim**, Jungpil Shin, Md Rashedul Islam,"Dynamic Hand Gesture based Sign Word Recognition using Convolutional Neural Network with Feature Fusion," *In 2019 IEEE 2nd International Conference on Knowledge Innovation and Invention (ICKII)*, pp. 221-224, July, 2019. **[Best Conference Paper Award]**
DOI: https://doi.org/10.1109/ICKII46306.2019.9042600

2019 Md Rashedul Islam, **Md Abdur Rahim**, Md Rajibul Islam, and Jungpil Shin. "Genetic Algorithm Based Optimal Feature Selection Extracted by Time-Frequency Analysis for Enhanced Sleep Disorder Diagnosis Using EEG Signal," *In Proceedings of SAI Intelligent Systems Conference*, pp. 881-894. Springer, Cham, 2019.
DOI: https://doi.org/10.1007/978-3-030-29513-46 5

2019 Shunsuke Kobayashi, Ryoma Takahashi, Mitsuki Aihara, **Md Abdur Rahim**, Md Rashedul Islam, Jungpil Shin, Kazuaki Kanai, Yoshikazu Ugawa, "Patho-

physiology of Micrographia in Parkinson's Disease," *60th Annual Meeting of the Japanese Society of Neurology*, Pe-051-1, May 22-25, 2019, Osaka, Japan.

2019 **Md Abdur Rahim**, Hyung-Jin Mun, Jungpil Shin,"Content-Based Image Retrieval (CBIR) Using Gabor Wavelet, Color Moments and Shape Features," *International Research Conference on Innovation, Technology and Sustainability*, pp. 701-702, January 24-25, 2019, Century Park Hotel, Manila, Philippines.

2018 **Md Abdur Rahim**, Jungpil Shin, and Md Rashedul Islam,"Human-Machine Interaction based on Hand Gesture Recognition using Skeleton Information of Kinect Sensor," *In Proceeding of the 3rd International Conference on Applications in Information Technology*, pp. 75-79, ACM, Nov. 2018.
DOI: https://doi.org/10.1145/3274856.3274872

2018 Md Rashedul Islam, **Md Abdur Rahim**, Hafeza Akter, Raihan Kabir, and Jungpil Shin, "Optimal IMF Selection of EMD for Sleep Disorder Diagnosis using EEG Signals," *In Proceeding of the 3rd International Conference on Applications in Information Technology*, pp. 96-101, ACM, Nov. 2018. **[Best Paper Award]**
DOI: https://doi.org/10.1145/3274856.3274876

2018 Jungpil Shin, **Md Abdur Rahim**, Keun Soo Yun, "Continuous Motion Detection using Histogram of Oriented Gradients," *The 5th International Conference on Small & Medium Business (ICSMB)*, W15-199, Jan. 17-19, 2018, Manila, Philippines.

2018 **Md Abdur Rahim**, Jungpil Shin, Keun Soo Yun, "Integrated Recognition of Handwritten and Printed Character using Machine Learning Algorithm," *The 5th International Conference on Small & Medium Business (ICSMB)*, W15-200, Jan. 17-19, 2018, Manila, Philippines.

BOOK CHAPTER (01)

2023 MD FARHANUL HAQUE, Abu Saleh Musa Miah, Md. Al-Hasan, Sumaiya Tabssum Mou, **Md Abdur Rahim**, Jungpil Shin, "Multichannel Attention Networks with Ensembled Transfer Learning to Recognize Bangla Handwritten Charecter", *International Conference on Big Data, IoT and Machine Learning*, 6-8 September, 2023, Bangladesh.

Research Grant: Ongoing

FY 2024-2025 An innovative approach to Gaze-based communication: Bengali word prediction from eye movement data using LSTM networks.

FY 2022-2023 Sensor-based Non-touch Bangla Character Input System using Machine and Deep Learning techniques, Under the research project of the University Grants Commission of Bangladesh.

Research Grant: Completed

FY 2023-2024 Person Identification from Natural Handwriting Using Machine and Deep Learning Techniques, Special Research Grant from Pabna University of Science and Technology.

FY 2022-2023 Deep Learning-based Hand Gestures Recognition for Non-touch Interface in Industrial Environments, Received Research Grant from Ministry of Science and Technology, People's Republic of Bangladesh, Project ID: SRG-222429.

FY 2022-2023 Predicting Parkinson's disease based on handwriting features using machine-learning techniques, Received Research Grant from Pabna University of Science and Technology, Bangladesh.

FY 2021-2022 Deep Ensemble Approach-based Bengali Sign Gesture Recognition, Received Research Grant from Pabna University of Science and Technology, Bangladesh.

FY 2016-2017 Segmentation Techniques for Iris Recognition System, Received Research Grant from Pabna University of Science and Technology, Bangladesh.

Awards & honours

2023 Innovative Project Award (Smart Classroom based on IoT), Pabna University of Science and Technology, Bangladesh.

2020 Best Conference Paper Award, 3rd Eurasian Conference on Educational Innovation 2020 (ECEI 2020), Ha Long Bay/Hanoi, Vietnam, February 5-7, 2020.

2019 Best Conference Paper Award, 2nd IEEE International Conference on Knowledge Innovation and Invention (ICKII), July 13-16, 2019, Seoul, South Korea,

2018 Best Paper Award, In Proceeding of the 3rd International Conference on Applications in Information Technology (ICAIT'2018), 2018.

2014-2015 Received research fund, supported by University Grants Commission (UGC) of Bangladesh under the projects of Research and Development (RD).

2013-2014 Research Fellowship at Ministry of Science and Technology, Bangladesh.

2009 Second Position in M.Sc. (Thesis) Examination Results

2008 Second Position in B.Sc. (Honours) Examination Results

2004-2008 Undergraduate scholarship at University of Rajshahi throughout the four years for excellent undergraduate level based on merit.

1997-1999 Merit Scholarship of Bangladesh Junior Level Scholarship Examination.

Work Experience

Dec.2020-Present Associate Professor, Department of Computer Science and Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.

Nov.2014-Dec. 2020 Assistant Professor, Department of Computer Science and Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.

Nov.2012-Nov.2014 Lecturer, Department of Computer Science and Engineering, Pabna University of Science and Technology, Pabna-6600, Bangladesh.

Dec.2011-Nov.2012 Lecturer, Department of Computer Science and Engineering, Uttara University, Uttara, Dhaka, Bangladesh.

Feb.2011-Dec.2011 Assistant Programmer, Bangladesh Computer Council, Bangladesh.

Others Experience

Jan. 2025-Present Member, D-Nothi Execution Committee, Pabna University of Science and Technology, Rajapur-6600, Pabna.

2025-Present Technical Focal Point, GST Admission Test 2024-2025, Pabna University of Science and Technology, Rajapur-6600, Pabna.

Jul. 2024-Present General Secretary, Teacher's Association, Pabna University of Science & Technology, Pabna-6600, Bangladesh.

Jan 24-Present Training Coordinator, Enhancing Digital Government and Economy (EDGE) project, Bangladesh Computer Council (BCC) under Information and Communication Technology Division Ministry of Posts, Telecommunications, and Information Technology, Government of the

Nov.2022-Present People's Republic of Bangladesh. Director, ICT Cell, Pabna University of Science and Technology, Rajapur-6600, Pabna.

Nov.2023-Present Chairman, Department of Computer Science and Engineering, Pabna University of Science and Technology, Rajapur-6600, Pabna.

2023-2024 Technical Focal Point, GST Admission Test 2023-2024, Pabna University of Science and Technology, Rajapur-6600, Pabna.

Jan.2024-Present Convener, Technical Sub-Committee under Purchase of Scientific Equipment for the Development Project of Pabna University of Science and Technology, PUST, Rajapur-6600, Pabna.

2021-24 III. Keynote Speaker as ICT Expert on Role in building Smart Bangladesh, District Information Office in 2021, 2022, 2023, and 2024, respectively.

2023 Keynote Speaker as ICT Expert on Role in Building Smart Bangladesh, Begum Rokeya University, Rangpur in 2023.

2022-23 Keynote Speaker as ICT Expert on Smart Bangladesh: Smart Education Smart Country, Deputy Commissioner's Office (Pabna DC Office) in 2022 and 2023, respectively.

Nov.2022-Present Convener, E-governance & Innovation Committee for Annual Performance Agreement (APA), Pabna University of Science and Technology, PUST, Rajapur-6600, Pabna.

Nov.2020-Oct,2023 Chairman, Department of Computer Science and Engineering, Pabna University of Science and Technology, Rajapur-6600, Pabna.

2022-2023 Technical Focal Point, GST Admission Test 2022-2023, Pabna University of Science and

	Technology, Rajapur-6600, Pabna.
2021-2022	Technical Focal Point, GST Admission Test 2021-2022, Pabna University of Science and Technology, Rajapur-6600, Pabna.
Jan.2021-Dec.2023	Member, Technical Sub-Committee under Purchase of Scientific Equipment for the Development Project of Pabna University of Science and Technology, PUST, Rajapur-6600, Pabna.
Jan.2021-May,2023	Member, Committee of the supply and specification and market price verification of computers and accessories given the needs of various departments and departments of Pabna University of Science and Technology, PUST, Rajapur-6600, Pabna.
Nov.2020-Aug. 2023	Member, Diary and Calendar Printing Committee, Pabna University of Science and Technology, Rajapur-6600, Pabna.
2014-2017	Assistant Proctor, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2016-2017	Member, Campus Network Sub-Project of BdREN, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2015-2016	Coordinator, MCSE Evening Program, Department of Computer Science and Engineering, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2016-2017	Secretary, Teacher-Officer Club, Pabna University of Science & Technology, Pabna-6600, Bangladesh
2016-2017	Executive Member, Teacher Association, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2015-2016	Member, Policy formulation committee for the study leave, Lien leave, and other leave, Pabna University of Science and Technology. 2015-2016.
2015-2016	Joint Secretary, Teacher Association, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2014-2015	Joint Secretary, Teacher's Association, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2013-2014	Executive Member, Teacher's Association, Pabna University of Science & Technology, Pabna-6600, Bangladesh.
2006-2011	Executive Member, Kurigram Zilla Somite, University of Rajshahi, Rajshahi, Bangladesh.

Thesis & Project Supervisions

Thesis Title:

- Dynamics of Digital Pen-Tablet Handwriting Analysis for Person Identification System

- Human Activity Recognition through Key Point Analysis and Segmented Mesh Fusion: A Comparative Study of KM-Model and SRGB-Model

- Person Detection based on pen-tablet handwriting (independent)

- ADHD Detection using Deep learning techniques

- Dynamic Hand Gesture Detection for Robotic Instructions

- Machine Learning-based Classification of Parkinson's Disease using Digitized Graphics Tablet

- DIABETES TYPE-2 PREDICTION USING ENSEMBLE MACHINE LEARNING APPROACH

- Evaluation of handwriting features for differential diagnosis of Parkinson's disease

- Virtual Keyboard-Based Bangla Character Input System Using Leap Motion

- MAMMOGRAPHY IMAGE ANALYSIS-BASED BREAST CANCER DETECTION USING CONVOLUTIONAL NEURAL NETWORK

- Multiple Face Detection & Recognition in Real Time Using Local Binary Patterns (LBP)

- Handwritten and Printed Character Recognition System Using Neural Network

- Segmentation Techniques for Iris Recognition System

- Content-Based Image Retrieval (CBIR) Using Gabor Wavelet, Color Moment & Shape

- Signal De-noising Based On Empirical Mode Decomposition and a Comparison between EMD and Wavelet Processing

- Automatic Gait Recognition for Human ID at a Distance

- Reducing Peak to Average Power Ratio of OFDM by Using Selected Mapping

- Custom object detection and recognition system

  Projects:

- AI Farming: Use of 4IR Technology for Smart Agriculture in Bangladesh– Ongoing

- Guest House Seat Reservation System using Mobile Apps– Ongoing

- CSE Department website design (Dynamic)— Ongoing

- Examination Control and Academic Module (ongoing)

- Designing a person detection and attendance system for a smart classroom with Internet of Things (IoT) technology (Received Innovative Project Award)– ongoing

- Online Library Management System

- Human Resource Management System

- Online Ticket Reservation System

- Cloud computing security and password management

- Tennis Sports Management System

- Payroll Management System

- Vehicular Cloud Computing

Reviewer of international journal and conference

1 IEEE Access

2 Multimedia Tools and Applications, Springer

3 International Journal of Computer Applications in Technology, Springer

4 International Conference on Small Medium Business (ICSMB)

5 MDPI Applied Sciences

6 IEEE Transactions on Artificial Intelligence

6 so on.

Conducted courses

- Artificial Intelligence

- Pattern Recognition

- Digital Image Processing

- Compiler Design

- Digital Systems

- Internet and E-Commerce

- Automata Theory and Compiler Design

- Database Management System

- Computer Fundamentals

- Programming with C and C++

- Cryptography and Network Security

- Design Pattern and Java Programming

- Microprocessor

- Computer Peripherals and Interfacing

- Numerical Methods

Programming skills

- **Programming Language**: Python, MATLAB, Microsoft C.NET,Visual Basic-6, Assembly Language(8085, 8086), C, C++, Java, Visual C++, Prolog.

- **Database**: MS SQL Server, MS Access, MySQL, Oracle

- **Networking**: DNS Server, FTP Server, Web server, Mail Server and Telnet configuration in Windows 2000/2003 server and Linux/Unix.

- **Scripting Language/Web Technology**: HTML, PHP, ASP.Net, Macromedia Dream Weaver, Adobe Photoshop, Adobe Illustrator

- **Operating System**: MS DOS, All Window, Linux.

English proficiency

1 Medium of Instruction was English in the Undergraduate Program at Dept. of CSE, University of Rajshahi, Bangladesh.

2 Medium of Instruction was English in Graduate Program (M.Sc.) at Dept. of CSE, University of Rajshahi, Bangladesh.

3 Medium of Instruction in English in my teaching profession at the Pabna University of Science & Technology. We are strongly instructed to conduct courses, supervision and discussion in English.

4 Medium of Instruction is English in PhD at the School of Computer Science and Engineering, The University of Aizu, Aizuwakamatsu, Fukushima, Japan.

Personal information

FATHER'S NAME:	Md Fazlar Rahman
MOTHER'S NAME:	Mst Omeda Begum
PLACE AND DATE OF BIRTH:	Bhurungamari, Kurigram, 11 October 1987
NATIONALITY:	Bangladeshi (By Birth)
SEX:	Male
RELIGION:	Islam
MARITAL STATUS:	Married
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Referees

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2 PROFESSOR DR. SHEIKH RASHEL AL AHMED
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