Nitun Kumar Podder

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RESEARCH OBJECTIVES

To undertake doctoral research in machine learning, deep learning, and secured intelligent systems, with interests in explainable AI, adaptive edge intelligence, IoT, and secure data-driven decision-making. I aim to develop robust, interpretable, and adaptive AI frameworks for healthcare and other real-world applications, particularly in distributed and resource-constrained environments.

ACADEMIC AND RESEARCH APPOINTMENTS

Assistant Professor, Dept. of Computer Science and Engineering Pabna University of Science and Technology (PUST), Pabna, Bangladesh	October 2025 – Present
Lecturer, Dept. of Computer Science and Engineering Pabna University of Science and Technology (PUST), Pabna, Bangladesh	October 2022 – October 2025
Research Associate Bangladesh Institute of Governance and Management (BIGM), Sher-E-Bangla Nagar, Dhaka-1207, Bangladesh	May 2022 – October 2022
Lecturer at Dept. of Computer Science and Engineering Z. H. Sikder University of Science and Technology, Shariatpur, Bangladesh	December 2019 – May 2022

EDUCATION

Master of Science in Computer Science & Engineering

Institution	Khulna University of Engineering & Technology (KUET), Khulna, Bangladesh
Semester Attended	July 2020 to July 2022
Result	3.83 out of 4.00 (Above 90%- 4.0, Above 80%- 3.5 scale)
Degree Awarded	September 18, 2022
Thesis Title	A Study on Identification of Influential Genes Revealed Survival Impact of Cancer Using Bioinformatics and Machine Learning Models

Bachelor of Science in Computer Science and Engineering

Institution	Pabna University of Science and Technology (PUST), Pabna-6600, Bangladesh
Session	2013-2014
Result	3.77 out of 4.00 (Marks- 80.68%) Degree awarded with HONOURS
Position	Stood 1st among 48 students
Degree Awarded	October 20, 2019
Thesis Title	Genetic Profiling and Comorbidities of Diabetes

RESEARCH INTEREST

- Machine Learning and Deep Learning
- Explainable and Trustworthy AI
- Adaptive Edge Intelligence and Edge AI
- IoT-Enabled Intelligent Systems
- Bioinformatics and Computational Biology
- Intelligent Healthcare and Data-Driven Decision-Making

PEER-REVIEWED PUBLICATIONS

Journal Articles (08): [Published and Accepted]

(1) Hossain, Syed Mossabbir, **Nitun Kumar Podder**, Md. Raihanul Haque, Poly Akter, and Tasfia Rahman Asma. 2026. "A Review for Bridging Clinical and Technical Gaps with Hybrid ML in Schizophrenia Diagnosis". Artificial Intelligence and Applications, June. https://doi.org/10.47852/bonviewAIA62028369. (**Q1**), Cite Score: 21.6 **(Corresponding Author)**

(2) **Podder, Nitun Kumar**, Humayan Kabir Rana, Md Shafiul Azam, Md Shohel Rana, Mst Rashida Akhtar, Md Rezanur Rahman, Md Habibur Rahman, and Mohammad Ali Moni. "A system biological approach to investigate the genetic profiling and comorbidities of type 2 diabetes." Gene Reports 21 (2020): 100830. https://doi.org/10.1016/j.genrep.2020.100830 (**Q4**), IF: 1.2

(3) **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 47 (2024): 101505. https://doi.org/10.1016/j.imu.2024.101505 (**Q2**), Cite Score: 10.5

(4) Shakil, Md Shahid Ahammed, Fahmid Al Farid, **Nitun Kumar Podder**, SM Hasan Sazzad Iqbal, Abu Saleh Musa Miah, Md Abdur Rahim, and Hezerul Abdul Karim. "Bangla Speech Emotion Recognition Using Deep Learning-Based Ensemble Learning and Feature Fusion." Journal of Imaging 11, no. 8 (2025): 273. https://doi.org/10.3390/jimaging11080273 (**Q2**), IF: 3.8

(5) Barua, Joy Dip, Shudeb Babu Sen Omit, Humayan Kabir Rana, **Nitun Kumar Podder**, Utpala Nanda Chowdhury, and Md Habibur Rahman. "Bioinformatics and system biological approaches for the identification of genetic risk factors in the progression of cardiovascular disease." Cardiovascular Therapeutics 2022, no. 1 (2022): 9034996. https://doi.org/10.1155/2022/9034996 (**Q2**), IF: 2.8

(6) Omit, Shudeb Babu Sen, Salma Akhter, Humayan Kabir Rana, ARM Mahamudul Hasan Rana, **Nitun Kumar Podder**, Mahmudul Islam Rakib, and Ashadun Nobi. "Identification of Comorbidities, Genomic Associations, and Molecular Mechanisms for COVID-19 Using Bioinformatics Approaches." BioMed Research International 2023, no. 1 (2023): 6996307. https://doi.org/10.1155/2023/6996307 (**Q2**), IF: 2.9

(7) Omit, Shudeb Babu Sen, Md Mohiuddin, Salma Akhter, Md. Hasan Imam, A. K. M. Mostofa Kamal Habib, Syed Mohammad Meraz Hossain, and **Nitun Kumar Podder**. "Computational and Bioinformatics Approaches for Identifying Comorbidities of COVID-19 Using Transcriptomic Data." Journal of Engineering Research and Sciences 3, no. 4 (2024): 32-41. 10.55708/js0304004

(8) Noor, Abu Mohammad, Farjana Yasmin, and Nitun Kumar Podder. "A Review on Computational Analysis of Diseases through Gene Ontology and Pathway Enrichment Using Enrichr." Letters in Applied NanoBioScience (2026). **(Accepted)** (Q4), CiteScore: 1.7, **(Corresponding Author).**

Book Chapters (09): [Published in Conference Proceedings]

(1) **Podder, N.K**., Shill, P.C. (2023). Statistical and Bioinformatics Model to Identify the Influential Genes and Comorbidities of Glioblastoma. In: Satu, M.S., Moni, M.A., Kaiser, M.S., Arefin, M.S. (eds) Machine Intelligence and Emerging Technologies. MIET 2022. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 491. Springer, Cham. https://doi.org/10.1007/978-3-031-34622-4_60

(2) Molla, M.M.I., Jui, J.J., Rana, H.K., **Podder, N.K.** (2023). Machine Learning Algorithms for the Prediction of Prostate Cancer. In: Ahmad, M., Uddin, M.S., Jang, Y.M. (eds) Proceedings of International Conference on Information and Communication Technology for Development. Studies in Autonomic, Data-driven and Industrial Computing. Springer, Singapore. https://doi.org/10.1007/978-981-19-7528-8_37

(3) Mia, M.N., **Podder, N.K.**, Zim, S.M.M.H., Haque, M.R., Ghosh, R. (2025). Network-Based Approaches and Gene Expression Profiling to Identify the Molecular Mechanism of Stomach Cancer. In: Palaiahnakote, S., Palit, R., Saraee, M., Atrey, P.K., Bai, X., Raman, B. (eds) Data Science, AI and Applications. ICDSAIA 2025. Communications in Computer and Information Science, vol 2683. Springer, Cham. https://doi.org/10.1007/978-3-032-11355-9_1

(4) Hossain, S.M., **Podder, N.K.**, Haque, M.R., Asma, T.R. (2025). Comparative Analysis of Classification and Regression Models for Schizophrenia Risk Prediction. In: Palaiahnakote, S., Palit, R., Saraee, M., Atrey, P.K., Bai, X., Raman, B. (eds) Data Science, AI and Applications. ICDSAIA 2025. Communications in Computer and Information Science, vol 2683. Springer, Cham. https://doi.org/10.1007/978-3-032-11355-9_3

(5) Haque, M.R., **Podder, N.K.**, Hossain, S.M., Akter, P., Zim, S.M.M.H., Chaity, M.S.A. (2025). A Systems Biology Approach to Identify Shared Genetic Signatures Between Dengue and Comorbidities. In: Palaiahnakote, S., Palit, R., Saraee, M., Atrey, P.K., Bai, X., Raman, B. (eds) Data Science, AI and Applications. ICDSAIA 2025. Communications in Computer and Information Science, vol 2682. Springer, Cham. https://doi.org/10.1007/978-3-032-11352-8_28

(6) Hossain, S.M., **Podder, N.K.**, Haque, M.R., Asma, T.R. (2025). A Review for Bridging Clinical and Technical Gaps with Hybrid-ML in Schizophrenia Diagnosis. In: Palaiahnakote, S., Palit, R., Saraee, M., Atrey, P.K., Bai, X., Raman, B. (eds) Data Science, AI and Applications. ICDSAIA 2025. Communications in Computer and Information Science, vol 2683. Springer, Cham. https://doi.org/10.1007/978-3-032-11355-9_4

(7) Islam, M.H., **Podder, N.K.**, Sakib, M.N., Mondol, A.K., Haque, M.R., Chaity, M.S.A. (2025). Bangla Speech Emotion Recognition Using 3D-CNN: A Multi-corpus and Cross-Lingual Study. In: Palaiahnakote, S., Palit, R., Saraee, M., Atrey, P.K., Bai, X., Raman, B. (eds) Data Science, AI and Applications. ICDSAIA 2025. Communications in Computer and Information Science, vol 2682. Springer, Cham. https://doi.org/10.1007/978-3-032-11352-8_32

(8) Puza, A.K., **Podder, N.K.**, Noor, A.M., Rahim, M.A., Chowdhury, M.N.A. and Mondal, M.N.I., 2026, June. Bangla Handwriting Based Person Identification Using Machine Learning Techniques. In *International Conference on Intelligent Data Analysis and Applications (IDAA 2025)* (pp. 1277-1290). Atlantis Press. https://doi.org/10.2991/978-94-6239-664-7_86

(9) Chowdhury, M.N.A., Mondal, M.N.I., **Podder, N.K.**, Antor, M.S.U.M. and Islam, M.H., 2026, June. Explainable and Optimized Random Forest Model for Customer Purchase Prediction and Segmentation in E-Commerce. In *International Conference on Intelligent Data Analysis and Applications (IDAA 2025)* (pp. 1347-1361). Atlantis Press. https://doi.org/10.2991/978-94-6239-664-7_91

Conference Proceedings (32):

(1) **Podder, Nitun Kumar**, Pintu Chandra Shill, Humayan Kabir Rana, Shudeb Babu Sen Omit, Md Mehedee Hasan Al Shahriar, and Md Shafiul Azam. "Genetic effects of covid 19 on the development of neurodegenerative diseases." In 2021 5th International Conference on Electrical Information and Communication Technology (EICT), pp. 1-6. IEEE, 2021. https://doi.org/10.1109/EICT54103.2021.9733698

(2) Datta, Ratri, **Nitun Kumar Podder**, Humayan Kabir Rana, Md Khaled Ben Islam, and Mohammad Ali Moni. "Bioinformatics approach to analyze gene expression profile and comorbidities of gastric cancer." In 2020 23rd International Conference on Computer and Information Technology (ICCIT), pp. 1-6. IEEE, 2020. https://doi.org/10.1109/ICCIT51783.2020.9392587

(3) **Podder, Nitun Kumar**, Fatama Akter, Arpa Kar Puza, Pintu Chandra Shill, Humayan Kabir Rana, Kalyan Kumar Saha, Ratri Datta, and Mohammad Alamgir Hossain. "A bioinformatics approach to identify the influences of diabetes on the progression of cancers." In 2022 International Conference on Advancement in Electrical and Electronic Engineering (ICAEEE), pp. 1-6. IEEE, 2022. https://doi.org/10.1109/ICAEEE54957.2022.9836409

(4) **Podder, Nitun Kumar**, Pintu Chandra Shill, Humayan Kabir Rana, Subir Saha, Afsana Mimi, Nahnun Nahar Corniya, Nandita Paul, and Tarun Kumar Saha. "Network-based approach to identify pathways and macromolecule interactions that mediate influences of covid-19 on the progression of respiratory system diseases." In 2022 International Conference on Advancement in Electrical and Electronic Engineering (ICAEEE), pp. 1-6. IEEE, 2022. https://doi.org/10.1109/ICAEEE54957.2022.9836408

(5) Roy, Bithy, Sabikun Nahar, Md Imam Hasan, Humayan Kabir Rana, **Nitun Kumar Podder**, and Shudeb Babu Sen Omit. "Identification of Influential Genes for Colorectal Cancer Using Machine Learning Approaches." In 2022 4th International Conference on Sustainable Technologies for Industry 4.0 (STI), pp. 1-6. IEEE, 2022. https://doi.org/10.1109/STI56238.2022.10103273

(6) M. Imam Hasan, S. Nahar, B. Roy, H. Kabir Rana, **N. Kumar Podder** and S. Babu Sen Omit, "Identification of Influential Genes for Lung Cancer Using Machine Learning Approaches," 2022 4th International Conference on Sustainable Technologies for Industry 4.0 (STI), Dhaka, Bangladesh, 2022, pp. 1-6, doi: https://doi.org/10.1109/STI56238.2022.10103239

(7) **N. K. Podder** et al., "Identification of Influential Genes and Comorbidities of Colorectal Cancer," 2022 International Conference on Recent Progresses in Science, Engineering and Technology (ICRPSET), Rajshahi, Bangladesh, 2022, pp. 1-5, https://doi.org/10.1109/ICRPSET57982.2022.10188541

(8) M. S. Rana, **N. K. Podder**, H. K. Rana, M. I. Hasan, M. S. Azam, MA Rahim, SM H. S. Iqbal, S. Saha, "Identification of Genomic Associations Between Parkinson's and Neurodegenerative Diseases Using Bioinformatics Models," 2023 International Conference on Electrical, Computer and Communication Engineering (ECCE), Chittagong, Bangladesh, 2023, pp. 1-6, https://doi.org/10.1109/ECCE57851.2023.10101597

(9) Islam, Md Shariful, Md Abdur Rahim, **Nitun Kumar Podder**, Md Najmul Hossain, and Md Imran Hossain. "Prediction of Irregular Bangladesh-EU Migration Trends Using Machine Learning Techniques." In 2024 3rd International Conference on Advancement in Electrical and Electronic Engineering (ICAEEE), pp. 1-6. IEEE, 2024. https://doi.org/10.1109/ICAEEE62219.2024.10561697

(10) **N. K. Podder**, M. D. Anamul Haque and S. Khatun, "Interdisciplinary Approaches to Identify Genetic Biomarkers Impacting Lung Cancer Progration," 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE), Chittagong, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/ECCE64574.2025.11013543

(11) **N. K. Podder**, S. Khatun and M. A. Haque, "Identification of Influential Genes and Survival Probability of Colorectal Cancer Patients," 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE), Chittagong, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/ECCE64574.2025.11013074

(12) **N. K. Podder**, B. Kumkum and F. Akhter, "Network-Based Bioinformatics Approaches to Identify Molecular Biomarkers for Diabetes on the Progression of Cancers," 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE), Chittagong, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/ECCE64574.2025.11013845

(13) R. Ghosh, **N. K. Podder**, M. N. Mia, S. M. M. H. Zim, M. R. Haque and M. H. Islam, "A Comprehensive Bioinformatics Approach to Identify Key Genes and Comorbidities of Breast Cancer," 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), Rangpur, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/QPAIN66474.2025.11171765

(14) A. M. Noor, M. R. Ahmed and **N. K. Podder**, "Development of an Automated Line-Following Robot for Intelligent Plant Irrigation," 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), Rangpur, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/QPAIN66474.2025.11171837

(15) M. H. Islam, M. Rashed, **N. K. Podder**, M. I. Hossain and A. K. Mondol, "Enhancing COPD Detection with WaveNet: Assessing the Efficacy of Deep Learning Model," 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), Rangpur, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/QPAIN66474.2025.11171716

(16) S. M. M. H. Zim, **N. K. Podder**, M. N. Mia, R. Ghosh, M. R. Haque and M. H. Islam, "Integrated Bioinformatics Analysis to Identify Biomarker Genes and Pathways in Lung Cancer," 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), Rangpur, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/QPAIN66474.2025.11171719

(17) P. Akter, **N. K. Podder**, M. S. A. Chaity, M. R. Haque, S. M. Hossain and M. S. Azam, "Genomic Insights and Systems Biology Perspectives on Comorbidities in Polycystic Ovary Syndrome," 2025 International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), Rangpur, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/QPAIN66474.2025.11171686

(18) S. K. Pandit, S. S. Arjon, T. Yasmin, **N. K. Podder**, N. Aman and M. H. Biplob, "Explainable Deep Learning for Lung Disease Detection: A Comparative Study Using Grad-CAM," 2025 28th International Conference on Computer and Information Technology (ICCIT), Cox's Bazar, Bangladesh, 2025, pp. 96-101, https://doi.org/10.1109/ICCIT68739.2025.11490541

(19) M. S. U. M. Antor, **N. K. Podder**, N. Aman, M. R. Haque, S. S. Arjon and T. Yasmin, "Comparative Deep Learning and Explainable AI Approaches for Automated Detection of Arsenic Skin Lesions," 2025 IEEE 2nd International Conference on Computing, Applications and Systems (COMPAS), Kushtia, Bangladesh, 2025, pp. 1-6, https://doi.org/10.1109/COMPAS67506.2025.11381857

(20) A. M. Noor, S. K. Sarker and **N. K. Podder**, "Divergent Insights from Machine Learning Based Identification Versus Traditional Differentially Expressed Gene Analysis in Tuberculosis Transcriptomics," 2025 28th International Conference on Computer and Information Technology (ICCIT), Cox's Bazar, Bangladesh, 2025, pp. 5359-5364, https://doi.org/10.1109/ICCIT68739.2025.11491767

(21) I. Jahan, **N. K. Podder**, F. Yasmin and J. K. Mitu, "Dissecting Innate and Adaptive Immune Imbalance in COVID-19 peripheral blood mononuclear cells using Single-Cell RNA Sequencing," 2026 International Conference on Power, Electronics,

Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11662092.

(22) F. Yasmin, **N. K. Podder**, I. Jahan and J. K. Mitu, "A Multi-Organ Single-Cell RNA Sequencing Study of Functional Specialization in Human Cardiac Macrophages," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11662040.

(23) M. S. Uddin Molla Antor et al., "CSEQIntent: A Benchmark Dataset for Intent Detection in Undergraduate CSE Student Questions," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661996.

(24) M. S. U. M. Antor, I. H. Tayesh, M. A. Sakib, **N. K. Podder** and I. Khan, "Robust, Explainable Cross-Dataset Deepfake Video Detection: Attention-Pooled Face Sequences with Compression-Aware UDA-DANN and Interactive GUI," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661959.

(25) M. S. Uddin Molla Antor, **N. Kumar Podder** and I. Khan, "From Black-Box to Transparent DTA: Token-Level and Global Interpretable XAI Explanations for SMILES-Based Affinity Prediction," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661856.

(26) S. Biswas, **N. K. Podder**, A. K. Puza, A. M. Noor, S. K. Pandit and M. A. Zaman, "MQI-Sort:A Multi-Strategy Adaptive Hybrid Sorting Framework for Robust and Scalable Data Ordering," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11662093.

(27) M. S. Uddin Molla Antor, T. Al Imran, M. R. Hossain, **N. Kumar Podder** and I. Khan, "End-to-End Hybrid Quantum Convolutional Networks with 8-Qubit Bottlenecks for CIFAR-10 with Explainable Inference," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661945.

(28) F. Yasmin, M. S. U. M. Antor, S. Khan, **N. K. Podder**, M. S. Biswas and S. M. A. Uddin, "Confidence-Aware Multi-Label Chest X-ray Screening: Temperature Scaling and Risk–Coverage Analysis on NIH14," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11662015.

(29) S. Hossen, M. A. Raihan, **N. K. Podder**, M. S. I. Ridi, M. S. I. Bristi and S. S. Rabin, "BirdNet-XAI: A Hybrid EfficientNetB0–ViT Model with Explainable AI for Fine-Grained Classification of Native Bangladeshi Birds," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661947.

(30) E. H. Hemal, J. Jarin, M. A. Johab and **N. Kumar Podder**, "Explainable AI-Based Lightweight CNN for Joint Age–Gender Prediction from Iris Images under Strict Subject-Disjoint Evaluation," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11662090.

(31) I. Jahan, T. Ahmed, M. S. Uddin Molla Antor, H. Rahman Hridoy, **N. K. Podder** and I. Khan, "Robust and Stable Multi-Label Chest X-ray Screening on NIH14: Corruption Sensitivity and Demographic Stratification with Explainability Validation," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661962.

(32) S. K. Pandit, A. Arian Ahmad, R. C. Das, S. Biswas, **N. K. Podder** and N. Aman, "Detection of Paratuberculosis from Histopathological Images Using Deep Learning and Explainable AI," 2026 International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure (PECCII), Pabna, Bangladesh, 2026, pp. 1-6, doi: https://doi.org/10.1109/PECCII70991.2026.11661943.

ARTICLES UNDER REVIEW

(1) Auditing Diagnostic Reliability in Maize Leaf Disease Classification on LeafNet: Exact-Duplicate Removal, Corruption Stress-Testing, Calibration, Post-Hoc Explainability, and Low-Data Transfer Learning (**2nd Round Revision in Food Science & Nutrition (Wiley)**) **(Q1)** IF 5.0 **(Corresponding Author)**

(2) Safety-Sensitive Transport Avoidance and Bike Avoidance Behaviour: A Two-Level Explainable Machine Learning Study from Pabna Municipality, Bangladesh (**2nd Round Revision in Scientific Reports (Nature Portfolio)) (Q1)** IF 4.9 **(Corresponding Author)**

(3) Integrated Bioinformatics and Machine Learning Reveal Shared Molecular Signatures between Lung Cancer and Neurodegenerative Diseases (Under Review)

(4) Explainable AI Based Machine Learning Framework for High-Throughput RNA-seq Analysis of Type II Diabetes with Functional Annotations and Drug Repurposing (Under Review)

(5) Robust and Interpretable Drug-Target Affinity Prediction using SMILES: A Multi-Dataset Evaluation with CNN-based Deep Learning and Explainable AI (Under Review)

(6) Integrated Single-Cell and Transcriptomic Analyses Reveal Proximal Tubule-Specific Molecular Signatures and Candidate Biomarkers in Diabetic Nephropathy. (Under Review)

(7) Multi-Omics Integration Reveals NK Cell-Associated Ribosomal Translation Signatures as Candidate Biomarkers in COVID-19. (Under Review)

(8) Integrated Single-Cell and Bulk Transcriptomic Analyses to Identify Microglia-Associated Molecular Signatures in Autism Spectrum Disorder. (Under Review)

(9) Tomato Leaf Disease Classification to Support Digital Agriculture System Using Deep Learning Approach (Under Review)

(10) Pioneering Bangladesh's First Socio Culturally Based ASD Dataset with AI Screening and Tele-Rehabilitation Support System: Autism Bondhon (Work in Progress)

RESEARCH EXPERTISE & TECHNICAL SKILLS

Research methods:	Transcriptomic and genomic analysis; systems biology; gene and pathway enrichment; survival analysis; biomarker discovery; disease-comorbidity analysis.
AI and data science:	Machine learning, deep learning, ensemble learning, classification, regression, feature selection, explainable AI, and predictive modelling.
Programming:	Python, R, C, C++, Java, C#, SQL, MATLAB, PHP, and JavaScript.
Bioinformatics tools:	Cytoscape, STRING, NetworkAnalyst, MEGA, RStudio, and Weka.
Research computing:	Jupyter Notebook, Linux, Git, GitHub, LaTeX, Microsoft Visual Studio, VS Code, and Anaconda.

LANGUAGE PROFICIENCY

Native Language:	Bengali
MOI:	English (Undergraduate & Postgraduate level)
IELTS Academic:	Overall Band 7.0 (Listening: 7.5, Reading: 6.5, Writing 6.5, Speaking: 6.5)

RESEARCH SUPERVISION & SELECTED PROJECTS

- Supervised more than 25 undergraduate theses and projects in machine learning, bioinformatics, software development, mobile applications and hardware systems.
- ML-Based Online Exam System for NACTAR, Bangladesh (2025).
- NLP project on word prediction, spelling correction, and sentiment analysis using Python (2020).
- Feasibility Study of the Integrated Reform Management Project, Cabinet Division, Government of Bangladesh (2022).
- State of Evidence-Based Policy Making in Bangladesh Public Service: Three Case Studies, including the Adolescent Health Strategy, Ministry of Public Administration, Bangladesh (2022).

ACADEMIC AWARDS & GRANTS

- Innovative Project Award for the Smart Plant Watering System, PUST, 2024.
- IEEE Best Paper Award, International Conference on Recent Progresses in Science, Engineering and Technology, Organized by IEEE Bangladesh Section 2022.
- Ranked 1st in the BSc Engineering examination, Department of CSE, PUST, 2019.
- Undergraduate merit scholarship throughout the BSc Engg. programme, PUST, 2014-2017.
- Merit scholarship in primary and secondary school.
- **Research Grants:** Ministry of Science and Technology, Bangladesh—R&D Projects (2025–2026 and 2023–2024); National Academy for Computer Training and Research (NACTAR), Bangladesh (2024–2025); and Pabna University of Science and Technology, funded by the University Grants Commission (UGC), Bangladesh (2024–2025 and 2023–2024).

ACADEMIC SERVICE AND PROFESSIONAL ACTIVITIES

- Assistant Provost, Shadhinata Hall, Pabna University of Science and Technology (2022-present).
- Advisor, IEEE PUST Student Branch (2024-2026).
- Advisor, PUST Data Science Club (2024-2026).
- Member, Technical Committee, IEEE International Conference on Power, Electronics, Communications, Computing, and Intelligent Infrastructure 2026.
- Member Secretary and Trainer, Enhancing Digital Government and Economy (EDGE) Project, funded by the World Bank and Government of Bangladesh (2024-2025).
- Member, Outcome-Based Education Curriculum Development Committee, Department of CSE, PUST.
- Reviewer for international journals and conferences.
- Associate Member, Bangladesh Computer Society (AM-14544).

PERSONAL DETAILS

Name:	Nitun Kumar Podder	**Nationality:**	Bangladeshi (by Birth)
Father's Name:	Nishith Kumar Podder	**Religion:**	Hinduism
Mother's Name:	Kalpana Rani Podder	**Blood Group:**	O+ (Positive)
Date of Birth:	25 December, 1994.	**Marital Status:**	Married
Permanent Address:	Village: West Garakhola; Post Office & Police Station: Madhukhali 7850; District: Faridpur; Division: Dhaka; Country: Bangladesh.		
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