Anwar Hossain Efat

MS in Computer Science (CS)
Idaho State University
Idaho-83209, USA

BSc in Computer Science & Engineering
RUET, Rajshahi-6204,
Bangladesh

Email: anwarhossainefat@gmail.com, anwarhossainefat@isu.edu

Website: anwarhossainefat.github.io

Google Scholar: scholar.google.com

ResearchGate: researchgate.net/profile/Anwar-Hossain-Efat

LinkedIn: linkedin.com/in/anwar-hossain-efat

GitHub: github.com/anwarhossainefat

RESEARCH SUMMARY

My research lies at the intersection of human–computer interaction (HCI) and software engineering (SE), focusing on how people experience, build, and trust interactive and intelligent systems. I am particularly interested in immersive technologies (AR/VR) and serious games for health and well-being, the usability, privacy, and security of such systems, and the human factors of AI-assisted software development. Building on a background in machine learning and explainable AI, I aim to pursue doctoral research that combines rigorous user-centred evaluation with empirical software engineering methods to create technology that is usable, trustworthy, and beneficial to people.

EDUCATION

Aug 2025 – May 2027 (expected)

Master of Science in Computer Science
CGPA: **4.00** (out of 4.00, to date)
Department of Computer Science (CS)
Idaho State University (ISU), Idaho-83209, USA.

Thesis (in progress): Gamified VR and Android Exposure Therapy for Germophobia with Real-Time Heart-Rate Adaptation (IRB-approved).
Supervisor: Dr. Farjana Z. Eishita, Dept. of CS, ISU.

Jan 2018 – Sept 2023

Bachelor of Science in Computer Science & Engineering
CGPA: **3.59** (out of 4.00)
Department of Computer Science & Engineering (CSE)
Rajshahi University of Engineering & Technology (RUET), Rajshahi-6204, Bangladesh.

Thesis: A Multi-level Ensemble Approach for Skin Lesion Classification using Customized Transfer Learning with Triple Attention.
Supervisor: S.M. Mahedy Hasan, Dept. of CSE, RUET.

CURRENT RESEARCH

HCI XR

Gamified VR and Android Exposure Therapy for Germophobia

MS Thesis IRB-Approved Supervisor: Dr. Farjana Z. Eishita, Idaho State University

Designing and developing a serious game that delivers graded exposure therapy for germophobia; the desktop and Android versions are built and the VR version is in development. The game synchronises with the player's real-time heart rate, and branching player choices change how elements of the environment respond. It will be evaluated through an IRB-approved user study.

SE

Merge or Malice? Toxicity and Sentiment Around AI Agent Pull Requests

In Preparation Invited extension for *Information and Software Technology* (Elsevier)
Advisor: Dr. Minhaz F. Zibran

Journal extension of the EASE 2026 paper "Merge or Malice?". Extends the dataset of AI pull requests, replicates the toxicity analysis on the larger dataset, and adds RoBERTa-based sentiment analysis of the surrounding discussions.

XR SEC

Sensitive Telemetry, Generic Protections: A Manual Audit of the Privacy Policies of Health, Fitness, and Mental Wellness Apps on the Meta Quest Store

Under Review

A manual audit of the privacy policies of health, fitness, and mental wellness VR apps, examining how they disclose and protect the sensitive telemetry these apps can collect.

HPC

Parallel Exam Timetabling with Graph Colouring

Paper in Preparation Began as a course project in CS 5570: High-Performance Computing Schedules university exams for a million students by colouring a course-conflict graph with MPI, OpenMP, and hybrid parallel solvers. Adds four constraints one at a time (no same-day conflicts, daily capacity, a minimum gap between conflicting exams, and room matching), and measures scaling and the time spent on computation, waiting, and communication after each one, on a synthetic university and the Toronto benchmark.

SELECTED PUBLICATIONS

Publications in my current research areas. Earlier ML/CV work is listed under Other Publications.

Topic Key HCI Human–Computer Interaction · SE Software Engineering · XR AR/VR & Games · SEC Security & Privacy · CV Computer Vision · ML Machine Learning · XAI Explainable AI · HPC High-Performance Computing

† First author ‡ Second author

XR SEC *[1]* **A.H. Efat**†, M.F. Zibran, F.Z. Eishita, "Cybersecurity Threats and Vulnerabilities in Virtual Reality Games: A Systematic Literature Review," in *International Conference on Computer Science and Information Technology (ICCSIT 2026)*. ACM Digital Library, 2026, pp. 1–17.

SE *[2]* **A.H. Efat**†, S.M.M. Hasan, M.F. Zibran, F.Z. Eishita, "Merge or Malice? Investigating Toxicity Around AI Pull Requests," in *Evaluation and Assessment in Software Engineering (EASE) Conference*. ACM Digital Library, 2026, pp. 1–5.

HCI XR *[3]* **A.H. Efat**†, F.Z. Eishita, "Gamified Virtual Exposure Therapy for Germophobia: A Cross-Platform Based Graphical User Interface Usability Study," in *Intermountain Engineering, Technology, and Computing Conference (i-ETC)*. IEEE, 2026, pp. 1–6. DOI: 10.1109/IETC69527.2026.11568637.

SOFTWARE & TOOLS

HCI SE

DeltaDraw: An Interactive Toolkit for Theory of Computation

Open Source Released Oct 2026 anwarhossainefat.github.io/deltadraw • Source code

A free, browser-based learning platform for Theory of Computation, organised by the chapters of Sipser's *Introduction to the Theory of Computation*. Students draw and simulate DFAs, NFAs, pushdown automata and Turing machines, follow constructions step by step (NFA→DFA, minimisation, regex↔NFA, Chomsky normal form, CYK, grammar→PDA), play the pumping lemma as an adversarial game, and practise with 50 exercises checked automatically with counterexamples. Includes an exam mode for proctored online exams in Canvas and exports diagrams to PNG, SVG, LaTeX (TikZ) and JFLAP.

XR

SnakeGo: A Modern Take on the Classic Snake Game

v2.0 Released Nov 2026 anwarhossainefat.github.io/SnakeGo • Source code

A 2D game built in GameMaker (GML) and playable in the browser on a computer or phone. Began as a course project in CS 5539: Introduction to Computer Game Development (v1.0, three levels); v2.0 fixes bugs, redraws the visuals, and adds eight levels built from text maps, Campaign and Free play modes, three speeds with score multipliers, saved high scores, generated sound effects, and swipe controls for phones.

WORK EXPERIENCE

Aug 2025 – Present

Graduate Teaching Assistant

Department of Computer Science (CS)
Idaho State University, Idaho-83209, USA.

Dec 2023 – Jul 2025

Lecturer

Department of Computer Science & Engineering (CSE)
IUBAT – International University of Business Agriculture and Technology, Dhaka-1230, Bangladesh.

Sep 2023 – Nov 2023 **Lecturer**
Department of Computer Science & Engineering (CSE)
North Bengal International University, Rajshahi-6204, Bangladesh.

TEACHING & SUPERVISION

Courses Taught Computer Fundamentals, Basic Programming (C, C++), Object Oriented Programming (C++, C#), Software Engineering, System Analysis & Design, Structured Programming, Operating System, Data Communication, Computer Hardware, Digital Image Processing.

Supervision

- Supervised and mentored over 15 student project/thesis works across multiple academic domains.
- Guided more than 15 students in developing software, hardware, and web projects.
- Led over 20 students in research spanning ML, Deep Learning, Image Processing, Medical Data Analysis, and Explainable AI.

SKILLS & INTERESTS

Research Interests Human–Computer Interaction, Augmented & Virtual Reality, Serious Games for Health, Software Engineering (human factors of AI-assisted development), Privacy & Security of Immersive Systems, Explainable AI.

Research Methods *HCI & user research:* usability evaluation, design of IRB-approved user studies, real-time physiological (heart-rate) sensing in games.
Empirical SE & security: mining software repositories, toxicity and sentiment analysis of developer discussions, systematic literature reviews, manual privacy-policy audits.
Data analysis: statistical analysis, ML/XAI experimentation.

Languages English – Full professional proficiency; Bengali – Native.

Programming Python, C, C++, C#.

Competitive Prog. 1,144 problems solved — codeforces.com/profile/ANWAR_HOSSAIN

Game & XR Dev. Unity, GameMaker (GML), C#, Android SDK, smartwatch heart-rate app (real-time HR sync), Firebase.

Repository Mining GitHub REST API, GitHub GraphQL API (pull-request data collection), RoBERTa (sentiment analysis).

Tools Git, LaTeX, MS Office.

STANDARDISED TEST SCORE

IELTS Overall Score: **7.5** Listening: **9.0** Reading: **7.0** Writing: **6.5** Speaking: **6.5**
07 Nov 2024

RELEVANT COURSEWORK

Graduate Research Methods in Human Computer Interaction, Special Problems in Software Engineering, Special Problems in Serious Game Development, GUI Development, Introduction to Computer Game Development, Foundations in Cybersecurity and Resilience, Cybersecurity Threat Intelligence, High-Performance Computing.

Undergraduate Software Engineering, Information System Analysis & Design, Computer Graphics & Animations, AI & Expert Systems, Neural Networks & Fuzzy Systems, Digital Image Processing, Data Mining, Network Security, Database Systems, Algorithms Design & Analysis, Data Structures, OOP, Operating System, Parallel & Distributed Processing.

OTHER PUBLICATIONS

Earlier work in machine learning, computer vision, and explainable AI, mostly for medical diagnosis.

Full record: 10 journal articles • 5 book chapters • 34 conference papers (3 listed under Selected Publications)
First-authored: 16 • **Second-authored:** 21

Journals

CV *[1]* M.S. Hasan, **A.H. Efat**‡, J.A. Bhuiyan, F.M. Mansia, "Enhancing Skin Lesion Classification Using a Tri-Path Attention Stacked Ensemble Architecture with Cohen's Kappa Proportioned Averaging," *Digital Health, Sage*, 2026. DOI: 10.1177/20552076261462026 **(Q1, Scopus, IF: 3.9)**.

CV *[2]* P. Bhowmick, J. Rahman, **A.H. Efat**, T.F. Nidhi, D.K. Amit, "Dual Concatenated Transfer Learning with Attention Fusion: An Ensemble-Enhanced Approach for Skin Lesion Classification," *Digital Health, Sage*, 2026. DOI: 10.1177/20552076261458948 **(Q1, Scopus, IF: 3.9)**.

CV *[3]* **A.H. Efat**†, S.M.M. Hasan, M.F. Zibran, F.Z. Eishita, "Incremental Inverse Kullback–Leibler Divergence Weighting ensemble for Skin Lesion Classification with Stacked RegNet Fusion and Attention-Triad," *Machine Learning with Applications*, 2026. DOI: 10.1016/j.mlwa.2026.100928 **(Q1, Scopus, IF: 6.1)**.

CV *[4]* J.A. Bhuiyan, **A.H. Efat**‡, M.S. Hasan, F.M. Mansia, "Hierarchical Attention Stacked Ensemble with Matthews-Correlation-Coefficient Weighted Averaging: A Novel Framework for Skin Lesion Classification," *Digital Health, Sage*, 2026. DOI: 10.1177/20552076261433750 **(Q1, Scopus, IF: 3.9)**.

CV *[5]* **A.H. Efat**†, "Tri-Attention Boosted Scalable EfficientNet for Skin Lesion Classification via Triple-Stage Gain Ratioed Averaging," *Franklin Open*, 2026. DOI: 10.1016/j.fraope.2026.100546 **(Q2, Scopus, IF: 3.7)**.

CV *[6]* **A.H. Efat**†, M.F. Zibran, F.Z. Eishita, "Skin Lesion Classification Breakthrough: Leveraging Independent-Serial-Parallel-Stacking Ensemble Architecture with Reciprocal Cross-Entropy Averaging," *IEEE Access*, 2026. DOI: 10.1109/ACCESS.2026.3657954 **(Q1, Scopus, IF: 3.6)**.

CV *[7]* **A.H. Efat**†, "χ^2 Weighted Ensemble: A Multi-Layer Ensemble Approach for Skin Lesion Classification using Optimized RegNet Synergy with Attention-Triplet," *PLOS ONE*, 2025. DOI: 10.1371/journal.pone.0321803 **(Q1, Scopus, IF: 3.7)**.

CV *[8]* **A.H. Efat**†, S.M.M. Hasan, M.P. Uddin, M.A. Mamun, "A Multi-level Ensemble Approach for Skin Lesion Classification using Customized Transfer Learning with Triple Attention," *PLOS ONE*, 2024. DOI: 10.1371/journal.pone.0309430 **(Q1, Scopus, IF: 3.7)**.

CV *[9]* **A.H. Efat**†, S.M.M. Hasan, M.P. Uddin, F.H. Emon, "Inverse Gini Indexed Averaging: A Multi-Levelled Ensemble Approach for Skin Lesion Classification Using Attention-Integrated Customized ResNet Variants," *Digital Health, Sage*, 2024. DOI: 10.1177/20552076241312936 **(Q1, Scopus, IF: 3.9)**.

CV *[10]* M.S. Alam, **A.H. Efat**‡, S.M.M. Hasan, M.P. Uddin, "Refining Breast Cancer Classification: Customized Attention Integration Approaches with Dense and Residual Networks for Enhanced Detection," *Digital Health, Sage*, 2024. DOI: 10.1177/20552076241309947 **(Q1, Scopus, IF: 3.9)**.

Book Chapters

CV *[1]* **A.H. Efat**†, S.M.M. Hasan, N. Jannat, M. Mitu, M. Oishe, M.F. Taraque, "Preventing Skin Cancer through Improved Skin Lesion Recognition: An Attention-Triplet and Multi-Layer Ensemble Based CNN Approach," in *Machine Learning for Healthcare Informatics*. Taylor & Francis Group, 2025, pp. 95–112. DOI: 10.1201/9781032650715-8.

CV ML *[2]* M. Oishe, S.M.M. Hasan, A.Y. Srizon, **A.H. Efat** et al., "Enhancing Glaucoma Prediction Performance in OCT Images using Machine Learning Based on HOG Features," in *Visual Sensing and Ubiquitous Computing*. Taylor & Francis Group, 2025, pp. 91–104. DOI: 10.1201/9781003485803-8.

ML *[3]* **A.H. Efat**†, S.F. Ferdous, S.I. Nayem, A.I. Surhyth, "From Data to Diagnosis: A Journey with Machine Learning, Hyperparameter Tuning, and Ensemble Learning for Disease Prognostication," in *Trends in Electronics and Health Informatics*. Springer, 2023, pp. 407–421. DOI: 10.1007/978-981-97-3937-0_28.

ML *[4]* S.F. Ferdous, **A.H. Efat**‡, "Unlocking Insights in Healthcare: A Comparative Study of Hyperparameter Tuned Machine Learning Algorithms," in *Trends in Electronics and Health Informatics*. Springer, 2023, pp. 341–356. DOI: 10.1007/978-981-97-3937-0_24.

CV *[5]* A.S.M.M. Fahim, **A.H. Efat**‡, S.M.M. Hasan et al., "Tri Focus Net: A CNN-Based Model with Integrated Attention Modules for Pest & Insect Detection in Agriculture," in *Trends in Electronics and Health Informatics*. Springer, 2023, pp. 225–240. DOI: 10.1007/978-981-97-3937-0_16.

Conference Papers

ML XAI *[1]* **A.H. Efat**†, S.M.M. Hasan, M.F. Zibran, F.Z. Eishita, "Why Do Admission Attempts Fail? An Analysis of Bangladeshi University Admission Applicants Using ML and XAI," in *International Conference on Computing and Machine Intelligence (ICMI)*. IEEE, 2026, pp. 1–10. DOI: 10.1109/ICMI68585.2026.11539936.

ML XAI *[2]* M. Sarker, **A.H. Efat**‡, M.A. Khan, M.F. Zibran, J.A. Nabin, "Unraveling the Factors of Procrastination: An Insightful Assessment Through ML and XAI," in *International Conference on Computing and Machine Intelligence (ICMI)*. IEEE, 2026, pp. 1–6. DOI: 10.1109/ICMI68585.2026.11539948.

ML XAI *[3]* M.A. Khan, **A.H. Efat**‡, M. Sarker, J.A. Nabin, "From Prediction to Causation: An Interpretable Diagnosis of Procrastination Using XAI with ML," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2025, pp. 4933–4938. DOI: 10.1109/ICCIT68739.2025.11490500.

ML XAI *[4]* S.I. Nayem, **A.H. Efat**‡, A.I. Surhyth, "X-Decision Tree: An Explainable AI Architecture for PCOS Prediction with Hyperparameter Tuning and Cross-Validation," in *International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)*. IEEE, 2025, pp. 1–6. DOI: 10.1109/QPAIN66474.2025.11171903.

ML XAI *[5]* F. Mansia, **A.H. Efat**‡, M.T. Rahman, "Optimized and Explainable XGBoost for Cardiovascular Disease Prediction: A Novel X-XGBoost Architecture," in *International Conference on Inventive Systems and Control (ICISC)*. IEEE, 2025, pp. 1350–1357. DOI: 10.1109/ICISC65841.2025.11188046.

CV XAI *[6]* **A.H. Efat**†, S.M.M. Hasan, M.F. Zibran, "GreekNet: Handwritten Greek Alphabet Recognition Using Explainable Parallel CNN with Attention Mechanisms," in *International Conference on Computing and Machine Intelligence (ICMI)*. IEEE, 2025, pp. 1–9. DOI: 10.1109/ICMI65310.2025.11141266.

ML XAI *[7]* **A.H. Efat**†, A.S.M.S. Ahamed, M.N. Ahmed, D.M.A. Afsar, "Advanced Heart Disease Classification through Feature-Tuned Explainable Support Vector Machine with Hyperparameter Tuning and Cross-Validation," in *International Conference on Computing and Machine Intelligence (ICMI)*. IEEE, 2025, pp. 1–5. DOI: 10.1109/ICMI65310.2025.11141066.

ML XAI *[8]* **A.H. Efat**†, "Pinpointing Key Success Factors in Bangladesh's Public University Entrance Exams: A Feature-Optimized SVM Architecture with XAI," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2024, pp. 429–434. DOI: 10.1109/ICCIT64611.2024.11021788.

CV *[9]* P. Bhowmick, **A.H. Efat**‡, S.M.M. Hasan, S.Z. Mishu, "Dual Concatenated DenseNet with Attention Fusion for Skin Lesion Classification," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2024, pp. 1087–1092. DOI: 10.1109/ICCIT64611.2024.11021776.

ML XAI *[10]* F. Mansia, **A.H. Efat**‡, M.S. Hoque, O. Mridul, "X-Random Forest: An Explainable AI Framework for Early-Stage Diabetes Prediction with Hyperparameter Tuning and Cross-validation," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2024, pp. 1281–1286. DOI: 10.1109/ICCIT64611.2024.11022169.

CV *[11]* N. Amin, **A.H. Efat**‡, A.F.M.M. Rahman, S.M.M. Hasan, "Enhanced Skin Lesion Detection Using Concatenated DenseNet and Multi-Attention Mechanisms," ★ Best Paper Award in *International Conference on Innovations in Science, Engineering and Technology (ICISET)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/ICISET62123.2024.10939433.

CV XAI *[12]* M.M. Mia, **A.H. Efat**‡, S.M.M. Hasan et al., "Exploring Augmentation Strategies for Balanced Skin Lesion Classification: An Explainable Lightly Tuned DenseNet-169 Architecture," in *International Conference on Innovations in Science, Engineering and Technology (ICISET)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/ICISET62123.2024.10939426.

CV XAI *[13]* M.A.K. Abir, **A.H. Efat**‡, S.M.M. Hasan et al., "Attention Enhanced Inception-V3: A Multi-Scale Feature Fusion Network for Skin Lesion Detection with Explainable AI," in *International Conference on Innovations in Science, Engineering and Technology (ICISET)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/ICISET62123.2024.10941566.

CV *[14]* T.F. Nidhi, **A.H. Efat**‡, S.M.M. Hasan, M.S. Zaman, A.N. Wasit, "Triple Attention MobileNetV3: Harnessing Integrated Attention and Transfer Learning for Next-Generation Skin Lesion Detection," in *IEEE Conference on Computing, Applications and Systems (COMPAS)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/COMPAS60761.2024.10796988.

CV XAI *[15]* I. Jahan, **A.H. Efat**‡, S.M.M. Hasan et al., "An Explainable Deep Learning Framework for Multi-Class Skin Lesion Classification While Resolving Class Imbalance," in *International Conference on Power, Electrical, Electronics and Industrial Applications (PEEIACON)*. IEEE, 2024, pp. 473–478. DOI: 10.1109/PEEIACON63629.2024.10800046.

CV *[16]* P. Roy, **A.H. Efat**‡, S.M.M. Hasan et al., "Multi-Scale Feature Fusion Framework Based on Attention Integrated Customized DenseNet201 for Multi-Class Skin Lesion Detection," in *International Conference on Power, Electrical, Electronics and Industrial Applications (PEEIACON)*. IEEE, 2024, pp. 496–501. DOI: 10.1109/PEEIACON63629.2024.10800647.

CV *[17]* T.T. Ahmmed, M.F. Faruk, A.Y. Srizon, S.M.M. Hasan, **A.H. Efat** et al., "Shallow Tuned DenseNet: A Lightweight CNN Approach for Enhanced Skin Lesion Recognition," in *International Conference on Power, Electrical, Electronics and Industrial Applications (PEEIACON)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/PEEIACON63629.2024.10800672.

CV *[18]* M.M. Hasib, M.F. Faruk, S.M.M. Hasan, **A.H. Efat** et al., "Improved Skin Lesion Detection with Double Layer Concatenated DenseNet Using Transfer Learning and Attention Modules," in *International Conference on Power, Electrical, Electronics and Industrial Applications (PEEIACON)*. IEEE, 2024, pp. 1–6. DOI: 10.1109/PEEIACON63629.2024.10800726.

ML *[19]* T. Das, S.M.M. Hasan, **A.H. Efat** et al., "Towards Superior EEG-Based Emotion Recognition: Integrating CNN Outputs with Machine Learning Classifiers for Enhanced Performance," in *International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)*. IEEE, 2024, pp. 699–704. DOI: 10.1109/ICEEICT62016.2024.10534372.

CV *[20]* N. Jannat, S.M.M. Hasan, **A.H. Efat** et al., "Efficient Detection of Crop Leaf Diseases: A Lightweight CNN Approach for Enhanced Agricultural Productivity," in *International Conference on Information and Communication Technology for Sustainable Development (ICICT4SD)*. IEEE, 2023, pp. 99–103. DOI: 10.1109/ICICT4SD59951.2023.10303536.

ML *[21]* S. Datta, S.M.M. Hasan, **A.H. Efat** et al., "Improved Diabetes Prediction with Reduced Feature Sets: Evaluating Feature Selection Techniques in Machine Learning," in *International Conference on Information and Communication Technology for Sustainable Development (ICICT4SD)*. IEEE, 2023, pp. 104–108. DOI: 10.1109/ICICT4SD59951.2023.10303528.

CV *[22]* N. Haque, **A.H. Efat**‡, S.M.M. Hasan et al., "Revolutionizing Pest Detection for Sustainable Agriculture: A Transfer Learning Fusion Network with Attention-Triplet and Multi-Layer Ensemble," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ICCIT60459.2023.10441171.

CV *[23]* S. Sikder, **A.H. Efat**‡, S.M.M. Hasan et al., "A Triple-Level Ensemble-based Brain Tumor Classification Using Dense-ResNet in Association with Three Attention Mechanisms," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ICCIT60459.2023.10441290.

CV *[24]* S. Shafin, **A.H. Efat**‡, S.M.M. Hasan et al., "Skin Lesion Classification through Sequential Triple Attention DenseNet: Diverse Utilization of Attention Modules," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ICCIT60459.2023.10441280.

CV *[25]* T.S. Joy, **A.H. Efat**‡, S.M.M. Hasan et al., "Attention Trinity Net and DenseNet Fusion: Revolutionizing American Sign Language Recognition for Inclusive Communication," in *International Conference on Computer and Information Technology (ICCIT)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ICCIT60459.2023.10440975.

ML *[26]* R. Haque, S.M.M. Hasan, **A.H. Efat** et al., "Evaluating the Efficacy of Feature Selection Methods in Cardiovascular Disease Prediction with Machine Learning," in *International Conference on Electrical Information and Communication Technology (EICT)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/EICT61409.2023.10427833.

ML XAI *[27]* M. Mitu, S.M.M. Hasan, **A.H. Efat** et al., "An Explainable Machine Learning Framework for Multiple Medical Datasets Classification," in *International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/NCIM59001.2023.10212821.

ML *[28]* N. Jannat, S.M.M. Hasan, **A.H. Efat** et al., "Stacking Ensemble Technique for Multiple Medical Datasets Classification: A Generalized Prediction Model," in *International Conference on Electrical, Computer and Communication Engineering (ECCE)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ECCE57851.2023.10101523.

ML *[29]* S. Datta, S.M.M. Hasan, **A.H. Efat** et al., "Hyperparameter-Tuned Machine Learning Models for Complex Medical Datasets Classification," in *International Conference on Electrical, Computer and Communication Engineering (ECCE)*. IEEE, 2023, pp. 1–6. DOI: 10.1109/ECCE57851.2023.10101525.

ML *[30]* M.F. Taraque, S.M.M. Hasan, **A.H. Efat** et al., "Early Stage Prediction of Autism Spectrum Disorder: Analyzing Different Hyperparameter-Tuned Machine Learning Classifiers," in *International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE)*. IEEE, 2022, pp. 1–4. DOI: 10.1109/ICECTE57896.2022.10114518.

ML *[31]* **A.H. Efat**†, S.M.M. Hasan, N. Jannat et al., "Inquisition of the Support Vector Machine Classifier in Association with Hyper-Parameter Tuning: A Disease Prognostication Model," in *International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE)*. IEEE, 2022, pp. 131–134. DOI: 10.1109/ICECTE57896.2022.10114543.

REVIEW RESPONSIBILITIES

- **Reviewer**, *Knowledge-Based Systems* (1 manuscript)
- **Reviewer**, *iScience* (1 manuscript)
- **Reviewer**, *Engineering Applications of Artificial Intelligence* (1 manuscript)
- **Reviewer**, *PLOS ONE* (2 manuscripts)
- **Reviewer**, *Franklin Open* (1 manuscript)
- **Reviewer**, *Signal, Image and Video Processing, Springer Nature* (1 manuscript)
- **Reviewer**, *IEEE Transactions on Medical Robotics and Bionics* (1 manuscript)

AWARDS & SCHOLARSHIPS

2025–2027 **Non-Resident Tuition Waiver**
Idaho State University, Idaho-83209, USA.

2024 **Best Paper Award**
International Conference on Innovations in Science, Engineering and Technology (ICISET 2024), IIUC, Chattogram-4318, Bangladesh.

2018–2022 **University Merit Scholarship**
RUET, Rajshahi-6204, Bangladesh.

2016 **5th Place, National Math Olympiad Selection Exam**
Adamjee Cantonment College, Dhaka-1206, Bangladesh.

RESEARCH ETHICS TRAINING

October 2026 **CITI Program: Human Subjects Research, Social/Behavioral Research Basic Course**
Required by Idaho State University. Valid until October 2031 • Verify certificate

September 2026 **Research Ethics Online Training (v2), all 10 modules**
Global Health Training Centre, The Global Health Network • View certificates

September 2026 **Introduction to Informed Consent**
Global Health Training Centre, The Global Health Network • View certificates

TRAINING & WORKSHOPS

July 2026 **ISU Summer Grant Writing Workshop**
Graduate School, Idaho State University, Idaho-83209, USA.

August 2023 **Software Quality Assurance (Basic and Intermediate)**
RUET, Rajshahi-6204, Bangladesh.

March 2023 **Online Leadership Course, Aspire Leaders Program**
Aspire Institute, Harvard University.

March 2023 **CyberSAFE: Securing Assets for the End User (DASPiB, Asi@Connect)**
RUET, Rajshahi-6204, Bangladesh.

April 2022 **Training on Technology and Capability Development, 4th Industrial Revolution (idea Project, BCC, ICT Division, Bangladesh)**
Rajshahi, Bangladesh.

SERVICE & LEADERSHIP

October 2026 **College Representative, Idaho Governor Candidates Event**
Selected by the dean to represent the College of Science and Engineering. ASISU, Idaho State University, Idaho-83209, USA.

October 2026 **Department Representative, Experience the Roar Open House**
Represented the Department of Computer Science to prospective students. Idaho State University, Idaho-83209, USA.

September 2026 **Department Representative, Bengal Block Party**
Represented the Department of Computer Science at the finale of ISU Celebration Week. Idaho State University, Idaho-83209, USA.

June 2026 – Present **Secretary, Bangladesh Student Association (BSA-ISU)**
Idaho State University, Idaho-83209, USA.

January 2024 **Member, Organizing Committee**
IUBAT CSE Football League (ICFL-2024), IUBAT, Dhaka, Bangladesh.

December 2022 **Member, Organizing Committee**
International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE 2022), Rajshahi, Bangladesh.

REFERENCES

[1] Dr. Minhaz F. Zibran *(Research Advisor)*
Associate Professor and Graduate Program Director, Department of Computer Science
Idaho State University, Idaho-83209, USA
Phone: +1 208-282-6205 Email: zibran@isu.edu

[2] Dr. Farjana Z. Eishita *(MS Thesis Supervisor)*
Assistant Professor, Department of Computer Science
Idaho State University, Idaho-83209, USA
Phone: +1 208-282-3302 Email: farjanaeishita@isu.edu

[3] Dr. Md Palash Uddin *(Research Collaborator)*
Postdoctoral Research Fellow, School of Information Technology
Deakin University, Australia
Phone: +61-3-924-68588 Email: m.uddin@deakin.edu.au