

# Sharia Arfin Tanim

## CONTACT INFORMATION

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## RESEARCH INTERESTS

Machine Learning, Computer Vision, Deep Learning, Federated Learning, Interpretable AI

## EDUCATION

**American International University-Bangladesh**  
B.S.c. in Computer Science and Engineering Nov. 2019-Nov. 2023

## PROFESSIONAL EXPERIENCE

**Advanced Machine Intelligence Research Lab**  
Research Assistant Dec. 2023 - Present  
**Learnify Research Lab (LRL)**  
Co-Founder Dec. 2023 - Present  
**GAO Tek Inc**  
IT Support & Development Sept. 2023 - Dec. 2023

## CURRENT RESEARCH

- Federated Learning-Driven Ovarian Cancer Classification Using Graph Attention Networks and Diffusion Models

### B.S.c. (Thesis)

Sharia Arfin Tanim, "Mud Crab Farming Profits and Growth with Machine Learning, Explainable AI and IoT-Based Systems in Coastal Aquaculture," Nov. 2023.

## FUNDING

- King Saud University, Riyadh, Saudi Arabia**  
Research Grant (Grant Number: RSPD2024R1027) awarded for the project "*Secure Federated Learning for Parkinson's Disease: Non-IID Data Partitioning and Homomorphic Encryption Strategies*," 2024.

## PUBLICATIONS

### Journals

[J4] **Sharia Arfin Tanim**, Al Rafi Aurnob, M. F. Mridha, Mejdil Safran, Sultan Alfarhood, and Dunren Che. "Secure Federated Learning for Parkinson's Disease: Non-IID Data Partitioning and Homomorphic Encryption Strategies." *IEEE Access*, Published, 2024 [impact factor: 3.4].

[J3] Rubaba Binte Rahman, **Sharia Arfin Tanim**, Nazia Alfaz, Tahmid Enam Shrestha, Md Saef Ullah Miah, and M. F. Mridha. "A Comprehensive Dental Dataset of Six Classes for Deep Learning Based Object Detection Study." *Data in Brief*, Published, 2024 [impact factor: 1.0].

[J2] **Sharia Arfin Tanim**, Al Rafi Aurnob, Tahmid Enam Shrestha, MD Rokon Islam Emon, M.F. Mridha, and Md Saef Ullah Miah. "Explainable deep learning for diabetes diagnosis with DeepNetX2." *Biomedical Signal Processing and Control*, Published, 2024 [impact factor: 4.9].

[J1] **Sharia Arfin Tanim**, Kazi Tanvir, Al Rafi Aurnob, Md. Hasibur Rahman, Tasmia Binte Munir Maisha, and Kamruddin Nur, "Enhancing Monkeypox Diagnostics: Exploring the Potential of EfficientNet and Big Transfer." *Journal of Image and Graphics*, Published, 2024 [Acceptance rate: 19.0%].

## Conferences

[C8] **Sharia Arfin Tanim**, Al Rafi Aurnob, MD Rokon Islam, Md Saef Ullah Miah, M. Mostafizur Rahman, and Mufti Mahmud, "Explainable Federated Stacking Models with Encrypted Gradients for Secure Kidney Medical Imaging Diagnosis." *31st International Conference on Neural Information Processing (ICONIP)*, Accepted, 2024.

[C7] **Sharia Arfin Tanim**, Tahmid Enam Shrestha, Kazi Tanvir, Md. Sayem Kabir, M. F. Mridha, and Mohamed Kaisarul Haq, "Single-Level Fusion for Enhancing Meat Quality Classification with Explainable AI." *2024 IEEE Conference on Computing Applications and Systems (COMPAS)*, Accepted, 2024.

[C6] **Sharia Arfin Tanim**, Rubaba Binte Rahman, Kazi Tanvir, Md. Sayem Kabir, Tasnim Sultana Sintheia, and Md Saef Ullah Miah. "Explainable Detection and Analysis of Cauliflower Leaf Diseases." *12th International Conference on Big Data and Artificial Intelligence (BDA 2024)*, Accepted, 2024.

[C5] Fahim Faysal Sakib, Sultan Mohiuddin Shawon, **Sharia Arfin Tanim**, Shahnaj Parvin, and Kamruddin Nur, "An E-Commerce Website Accessibility Issue Detection and Evaluation System." *15th International Conference of Human-Computer Interaction (HCI) Design & Research*, Accepted (**Poster**), 2024.

[C4] **Sharia Arfin Tanim**, Gazi Mohammad Imdadul Alam, Tahmid Enam Shrestha, Maruful Islam, Fariha Jahan, Kamruddin Nur, "Breast Cancer Diagnosis with XAI-Integrated Deep Learning Approach." *2024 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT)*, Accepted, 2024.

[C3] Md. Tarek Chowdhury, **Sharia Arfin Tanim**, Tahmid Enam Shrestha, Md. Fahim Hossain, and Muhibul Haque Bhuyan, "Enhancing Electoral Integrity: A Multi-Layered Approach to Electronic Voting Security Using Arduino and Biometric Authentication." *5th International Conference on Data Analytics & Management (ICDAM)*, Accepted, 2024 [Acceptance rate: 20.0%].

[C2] **Sharia Arfin Tanim**, Al Rafi Arnob, Tahmid Enam Shrestha, Tamimul Alam, and Kamruddin Nur, "Enhancing blood cell classification by applying big transfer and XAI." *5th Doctoral Symposium on Computational Intelligence (DOSCI)*, Accepted, 2024 [Acceptance rate: 20.0%].

[C1] Zuhair Ahmed, **Sharia Arfin Tanim**, Fariya Sultana Prity, Hasibur Rahman, and Tasmia Binte Munir Maisha, "Improving Biomedical Image Segmentation: An Extensive Analysis of U-Net for Enhanced Performance." *Second International Conference on Emerging Trends in Information Technology and Engineering (ICETITE)*, Published, 2024 [Acceptance rate: 19.18%].