Md Anawarul Azim Safin

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SUMMARY

- Bachelor of Science in Biomedical Engineering with a focus on biomedical signal processing, medical imaging, and bioinformatics.
- Research experience in developing deep learning models for multi-omics data analysis and IoT-based healthcare systems.
- Proficient in Python, MATLAB, TensorFlow, and PyTorch, with hands-on experience in RNA-seq and RPPA data analysis.

EDUCATION

Khulna University of Engineering & Technology, Bangladesh *January 2020 – Present*
Bachelor of Science in Biomedical Engineering

- **Relevant Courses:** Biomedical Signal Processing, Medical Imaging, Bioinformatics, Bionanotechnology, Neuroimaging, Biomaterials.
- **Thesis:** "OmniDrugNet: Hybrid Attention Models for Drug Response Prediction" (Supervisor: Prof. Dr. Md Basir Uddin).

CERTIFICATIONS

- **Supervised Machine Learning: Regression and Classification** *Coursera*
  Offered by DeepLearning.AI. Covered neural networks, CNNs, RNNs, and attention mechanisms.
  View Certificate
- **Introduction to Statistics** *Coursera*
  Offered by Stanford University. Covered descriptive and inferential statistics, probability, and data analysis.
  View Certificate
- **Python for Data Science, AI & Development** *Coursera*
  Offered by IBM Developer Skills Network. Covered Pandas, NumPy, Scikit-learn, and data visualization.
  View Certificate

RESEARCH EXPERIENCE

Thesis: NeuroGraphDRP: Multi Omics Graph Neural Networks with Quantum-Inspired Computing for Cancer Drug Response Prediction
Supervisor: Prof. Dr. Md. Basir Uddin *January 2024 – Auguest 2025*
Manuscript submitted to Briefings in Bioinformatics (Under Review)

- Developed a novel multi-omics graph neural network architecture incorporating quantum-inspired computing principles for enhanced cancer drug response prediction.
- Implemented quantum learning algorithms within the GNN framework, achieving a **70%** reduction in training time while significantly improving prediction performance.
- Successfully completed the research with demonstrated superior accuracy in drug response prediction compared to traditional machine learning approaches.

TECHNICAL SKILLS

Programming: Python, MATLAB, R, C++
Deep Learning: TensorFlow, PyTorch, Keras
Bioinformatics: RNA-seq, RPPA, TCGA, GDSC
Tools: Flask, Docker, Git, Linux

PROJECTS

1. Real-Time Seizure Detection & IoT Drug Delivery *November 2024 – January 2025*

- Built ESP32 system with multimodal sensors (EMG, GSR, accelerometer), reducing false positives by multisensor integration.
- Deployed Flask API for real-time alerts; published code on GitHub.

2. Temperature and Humidity Control of Baby Incubator with Real-Time Heart Rate Detection using IR LED *September 2023 – December 2023*

- Designed and implemented a baby incubator system using Arduino Uno, integrating temperature, humidity, and IR sensors for real-time monitoring.
- Published code and documentation on GitHub.

AWARDS AND ACHIEVEMENTS

- **Blood Donation Campaign Leader** *Bangladesh Red Crescent Society*
  Led a team of 10 volunteers to organize a blood donation camp, collecting 100+ units of blood.
- **Participant, National Math and Physics Olympiads** *2017, 2018*
  Demonstrated problem-solving and analytical skills in national-level competitions.
- **Workshops Attended**
  - LaTeX Workshop *KUET, 2021*
  - Machine Learning Workshop *KUET, 2022*

EXTRACURRICULAR ACTIVITIES

- Human Resource Executive of KUET Research Society, KUET.
- Assistant Program coordinitor of Advance Bio-engineering Club, KUET.
- Member of TRY, KUET.
- Organized workshops on about thesis/research work for undergraduate students.

REFERENCES

Prof. Dr. Md. Basir Uddin
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Prof. Dr. Muhammad Muinul Islam
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