Abdullah Al Omar Galib

Dhaka, Bangladesh

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Experience

Quantum High School Organization
Co-Founder & Vice President   *July 2023 - Present, Global*

- Spreading quantum education globally through online initiatives, including webinars, workshops, and interactive content.
- Instructed and mentored over 500 students in quantum computing, modifying the educational approach to suit the needs of diverse learners. This involved creating customized lesson plans, interactive exercises, and providing regular feedback.
- Organized and led two highly successful quantum education events. The first event was dedicated to teaching quantum computing to beginners, ranging from high school students to graduate students, and was attended by over 300 participants. The second event focused on cutting-edge quantum computing research. Both events received positive feedback and contributed to the growth of quantum education and research.

QWorld
Research Intern   *July 2023 - August 2023, Remote*

- Conducted an extensive and rigorous investigation into various approaches for Quantum State Tomography (QST), encompassing classical and quantum methodologies.
- Implemented and compared different Quantum Machine Learning (QML) approaches for QST, such as supervised and unsupervised learning techniques, to assess their performance and accuracy. Utilized cutting-edge quantum hardware and quantum simulators to conduct QST on multi-qubit networks and complex entangled states.
- Achieved an impressive 98% fidelity in the quantum state reconstruction process, validating the effectiveness and precision of the chosen methodologies.
- The research findings and results were documented in a comprehensive research paper, contributing to the scientific community's understanding of quantum state tomography.

iTesseract Technologies Ltd
Robotics, IoT & AI Project leader   *Sep 2022 - Nov 2022, Dhaka, Bangladesh*

- Developed and implemented AI software with an outstanding 99% accuracy rate, significantly reducing the risk of accidents and enhancing overall road safety.
- Won the Best Project Director award.

Projects

- **Bronze Pytket (Quantinuum)** - An introductory quantum computing tutorial using Pytket, created in August 2023 with Quantinuum support.
- **CNN for Brain Tumor (Machine Learning)** - Built a CNN with Keras and TensorFlow to classify brain MRI images, achieving 92% accuracy.
- **Driving Safety (Machine Learning)** - Created a real-time driving safety application using facial landmark detection and traffic sign recognition, achieving 99% accuracy.
- **Quantum Computing Notebook for Beginners** - Authored a beginner-friendly Jupyter notebook using Qiskit to introduce fundamental quantum computing concepts.
- **Text Classification with Recurrent Neural Networks** - Developed a binary text classification model with a two-layer LSTM-based RNN, achieving 99.64% accuracy.

Publications

N. Innan, O.I. Siddiqui, S. Arora, et al. Quantum state tomography using quantum machine learning. *Quantum Machine Intelligence*, 6(1):28, 2024. doi:10.1007/s42484-024-00162-3.

M. A. Khan, N. Innan, A. A. Galib, and M. Bennai. Brain tumor diagnosis using quantum convolutional neural networks. *ArXiv*, 2024. URL: https://arxiv.org/abs/2401.15804.

Skills

Quantum Computing: Qiskit, Pytket, criq
AI & Machine Learning: TensorFlow, Keras
Software Development: Unreal Engine 5, Python
Community & Education: Webinars, Workshops, Lesson Planning, Mentoring
Project Management: Project Leadership, Team Collaboration, Time Management
Soft Skills: Leadership, Communication, Collaboration, Problem-Solving

Education

BRAC University   **Dhaka, Bangladesh**
Bachelor of Science - Applied Physics and Electronics
Currently pursuing

St. Joseph Higher Secondary School   **Dhaka, Bangladesh**
Higher Secondary School Certificate (HSC)
Result: GPA 5.00

Languages

- Bangla (Native)
- English (Advanced)

Awards

- **Best Project and Best Presentation awards**, Issued by QWorld, Aug 2023
- **The Asia Pacific Regional Ozone2Climate Art Contest**, Issued by UNESCO, Sep 2022 (1st Runner-up)
- Discover more about my accolades and achievements by following this LINK.