

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.
- Mentored 500+ students in quantum computing, creating tailored lesson plans and interactive content.
- 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

- Researched classical and quantum approaches for Quantum State Tomography (QST).
- 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.
- **Quantum Convolutional Neural Networks vs Fully Classical CNNs**
 - Compared hybrid quantum-classical CNNs with classical CNNs on MNIST, achieving 90.54% accuracy with the quantum model, outperforming the classical model by 8.57%.
- **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.
- **Fruit Detection and Classification** - Built a YOLOv8-based model to detect and classify 36 fruit and vegetable classes with 91.68% mAP, optimized for real-time agricultural applications.

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](https://doi.org/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 Dhaka, Bangladesh
Secondary School

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
- Successfully participated in **unitary-HACK2024** on May 29 - June 12, 2024, and contributed to the quantum open-source ecosystem.
- Discover more about my accolades and achievements by following this [LINK](#).