Md Rahatul Ashakin

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EDUCATION

- **Master of Science in Information Technology** — October 2022 - March 2024
  Washington University of Science and Technology (WUST) — *Alexandria, VA, USA*
- **Bachelor of Science in Computer Science and Engineering** — September 2013 - August 2018
  North South University — *Dhaka, Bangladesh*

WORK EXPERIENCE

- **Data Science Intern | Quantum Computing Research, ML Applications, and Data Analytics** — May 2024 - Present
  Tekurai Inc (Remote, Hollis - NY) — *San Antonio, TX*
  - Developed Transformer-based models alongside Convolutional Neural Networks to analyze over 200 patient-doctor conversations, achieving precise detection of drug interactions with a focus on improving treatment accuracy.
  - Processed and analyzed over 500,000 healthcare records using Python libraries like Pandas and NumPy; constructed interactive visualizations in Power BI that investigated key trends, improving patient care strategies by leveraging data-driven insights.
  - Implemented blockchain frameworks for secure data management in drug discovery, ensuring decentralized access that reduced risk of data breaches by 80% during multi-institutional research projects.
  - Published 6 research papers in reputable journals and conferences focusing on quantum AI-enhanced transformers, blockchain frameworks for healthcare, and multimodal AI applications; findings showcased advancements in next-generation health solutions.
  - Achieved 92.8% accuracy and 0.96 AUC using a hybrid Quantum Variational Transformer for cancer classification, surpassing classical models by 5%.
  - Boosted FinBERT to 88% accuracy and 0.87 F1-score in financial sentiment analysis via quantum-tuned hyperparameters, outperforming classical methods by a clear 3% margin.
- **Program Manager | Data Strategy Development, Predictive Analytics & Business Intelligence** — February 2022 - August 2022
  ShopUp — *Dhaka, Bangladesh*
  - Created nationwide and zone-wise retail (B2C) and wholesale (B2B) strategies through market trend analysis, achieving a reduction in return ratio from 35% to 9% and order cancellations from 43% to 18%.
  - Designed predictive models using Python (Pandas, Scikit-learn) to optimize inventory levels and forecast sales for hero products, driving a 12% revenue increase.
  - Crafted interactive KPI visualizations utilizing advanced features in Tableau and Power BI; streamlined reporting processes for 15+ departments while increasing accessibility of crucial business intelligence metrics by over 30%.
  - Executed automated data-driven evaluations that identified the top three causes of delays in channel operations; recommendations led to substantial improvements in process throughput and a measurable increase in team productivity.
- **Project Manager | Data Analytics, SQL Database Management, and Agile Leadership** — June 2020 - February 2022
  Icon Information Systems Ltd — *Dhaka, Bangladesh*
  - Planned and executed real-time reporting systems that tracked key performance indicators (KPIs) across four major initiatives; streamlined communication flow between cross-functional teams, enhancing decision-making processes and expediting project timelines by two weeks on average.
  - Coordinated agile ceremonies for five distinct project teams, ensuring continuous feedback loops and adaptation of processes; implemented structured retrospective meetings leading to the identification of three key areas reducing bottlenecks in delivery.
  - Reduced project costs by 15% through data-driven resource allocation and workflow optimizations, improving overall project efficiency.
- **Assistant Project Manager | Project Management, Python Development, and SQL Optimization** — November 2018 - May 2020
  Millennium Information Solution Ltd. — *Dhaka, Bangladesh*
  - Orchestrated the successful implementation of critical projects such as HRIS for JTI and AIBL's Remittance Management System, ensuring alignment with client objectives while achieving a 90% satisfaction rating from stakeholders.
  - Initiated rigorous assessments of system reliability through UAT; addressed over 15 critical issues prior to launch, ensuring a seamless implementation process for projects impacting hundreds of thousands of users.
  - Enhanced the AIBL Remittance Management System, reducing processing time by 21% and boosting transaction security.

PUBLICATIONS

- **Conference Proceedings:**
  - **[C1]**: Don Roosan, **Md Rahatul Ashakin**, Rubayat Khan, Hasiba Mashed Khan, Tiffany Khou, Maria-Isabel Carnasciali, Mohammad Rifat Haider, Variational Quantum Circuits for Molecular Classification Using Graph Neural Network, 2025 International Conference on Quantum Communications, Networking, and Computing (QCNC), 2025.
  - **[C2]**: Don Roosan, Rubayat Khan, **Md Rahatul Ashakin**, Tiffany Khou, Adaptive Multimodal Artificial Intelligence with Liquid Neural Network for Edge Computing-Based Augmented Reality, in 6th International conference on Industrial Engineering and Artificial Intelligence (IEAI2025), 2025.
  - **[C3]**: Don Roosan, Rubayat Khan, Tiffany Khou, **Md Rahatul Ashakin**, Quantum Variational Transformer Model for Enhanced Cancer Classification, 6th International conference on Industrial Engineering and Artificial Intelligence IEAI2025), 2025
  - **[C4]**: Don Roosan, Tiffany Khou, Brian Pham, Yawen Li, **Md Rahatul Ashakin**, Hasiba Mashed Khan, Rubayat Khan, Mohammad Rifat Haider, Quantum AI enhanced blockchain security for drug discovery, in 9th International Conference on Innovation in Artificial Intelligence (ICICI2025), 2025.
- **Journals:**
  - **[J1]**: **Md Rahatul Ashakin**, Md Shishir Bhuyian, Md Refat Hosain, Rifah Sajida Deya, Sayed Eqramul Hasan, Transforming to Smart Healthcare: AI Innovations for ImprovingAffordability, Efficiency, and Accessibility, 2024, Pathfinder of Research.
  - **[J2]**: Hossain Ifty, Bayazid Hossain, **Md Rahatul Ashakin**, Mazharul Islam Tusher, Rashedul Haque, Adoption of IoT in Agriculture-Systematic Review, 2023, Applied Agriculture Sciences.
  - **[J3]**: **Md Rahatul Ashakin**, Bayazid Hossain, Syed Mosaddik Hossain Ifty, Enhancing Digital Signal Processing: Obstacles and Advancements in FPGAand ASIC Hardware Implementations, 2024, Pathfinder of Research.
  - **[J4]**: SM Hossain Ifty, **Md Rahatul Ashakin**, B Hossain, S Afrin, A Sattar, R Chowdhury, MI Tusher, PK Bhowmik, MT Mia, T Islam, M Tufael, AR Sunny, IOT-Based Smart Agriculture in Bangladesh: An Overview, 2023, Applied Agriculture Sciences.
  - **[J5]**: Md Tahsin Salam, Kaniz Fatema Bari, Md Mostafizur Rahman, Dewan Muhammad Mahmudul Gafur, MO Faruk, K Akter, F Irin, **Md Rahatul Ashaki**n, TA Shaikat, AC Das, M Tufael, MM Mithun, AR Sunny, Emergence of antibiotic-resistant infections in ICU patients, 2024, Journal of Angiotherapy.
  - **[J6]**: SMH Ifty, F Irin, MSS Shovon, MHH Amjad, PK Bhowmik, R Ahmed, **Md Rahatul Ashakin**, B Hossain, M Mushfiq, A Sattar, R Chowdhury, AR Sunny, Advancements, Applications, and Future Directions of Artificial Intelligence in Healthcare, 2024, Journal of Angiotherapy.

ACADEMIC SERVICES

- **Research Programmer:**
  - **Courses:** DSE4900 & DSE 3010 (Remote)**: Data Science Capstone**, Fall'24 and **Machine Learning for Data Science**, Fall'24, **Merrimack College** (North Andover, MA 01845)
  - Directed capstone thesis projects and spearheaded machine learning research, focusing on designing advanced models that enhanced prediction accuracy by 50% while addressing the three largest causes of model errors. Collaborated with students to apply machine learning techniques to diverse problems and utilized modern tools to optimize workflows and ensure research success.

SKILLS

- **Technical Skills:** Python (Proficient), R, SQL, Java; Pandas; NumPy; Scikit-learn; TensorFlow; Keras; PyTorch
- **Machine Learning Expertise:** Graph Neural Networks (GNN); Transformer Models; Predictive Modeling; NLP; A/B Testing
- **Data Visualization Tools:** Power BI; Tableau; Advanced Excel; Data-Driven Insights
- **Cloud Technologies:** AWS; Azure; GCP; ETL Pipelines; SQL Databases; NoSQL Databases
- **Tools & Platforms**: Jupyter Notebook, Git, Docker, Flywheel, Anaconda, Visual Studio Code, PyCharm, TensorBoard, AWS SageMaker, Google Colab, Tableau, Power BI, MATLAB, Azure Machine Learning, Qiskit, IBM Watson Studio.

HONORS AND AWARDS

- **Presidential List**
  - Graduate - Master of Science in Information Technology, WUST, Alexandria, Virginia.