Md Abrar Jahin, CSCA™

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Citizenship: Bangladesh

GitHub
LinkedIn
Personal Website

Google Scholar
ResearchGate
ORCiD

Education

University of Southern California (USC) — Los Angeles, CA, USA
Ph.D. in Computer Science — *Aug 2025 – Present*
- Awarded Viterbi Graduate School Fellowship for 2025-2026
- Co-advised by Prof. Craig Knoblock and Prof. Jay Pujara

Khulna University of Engineering & Technology (KUET) — Khulna, Bangladesh
B.Sc. Eng. in Industrial & Production Engineering — *Nov 2018 – Mar 2024*
CGPA: 3.83/4.00 (Top 5% of class)
- Dean's award: 2018-2019, 2019-2020, 2020-2021
- Thesis title: Supply Chain Backorder Prediction Using Interpretable Hybrid Quantum–Classical Neural Network [Thesis Presentation] [*Supervisor*: Dr. Md. Saiful Islam]
- Developed the first-ever LaTeX template for B.Sc. Undergrad Thesis of KUET [Template]
- First Highly Commended Research Awardee from the Global Undergraduate Awards (2025) in KUET's history
- Google Knowledge Panel of Md Abrar Jahin

Research Interests

† Efficient Deep Learning (DL)
- *Geometric & Spiking Neural Networks, Kolmogorov-Arnold Networks (KAN), Physics-informed Neural Networks (PINN)*

† Quantum Computing
- *Quantum Machine Learning (QML)*

† Trustworthy AI
- *Explainable AI (XAI)*
- *Uncertainty Quantification*
  - ◇ *Conformal Prediction*

† Self-Supervised Learning (SSL)
- *Contrastive Learning*

† Reinforcement Learning (RL)
- *Inverse RL, Imitation Learning*

† Natural Language Processing (NLP)
- *Sentiment Analysis*

Research Experiences

❖ **AI Researcher** — *Aug 2025 – Present*
Center of Knowledge Graphs, USC Information Sciences Institute (ISI), Marina del Rey, CA, USA
Supervisors: Prof. Craig Knoblock and Prof. Jay Pujara
Research projects:
[1] Modeling Sparse and Heterogeneous Geochemistry Data to Accelerate Critical Mineral Discovery (STTR Phase II) [Funded by **DARPA/USGS**; $759,346; Jan 2026 – Jul 2027]
- – Developing a geochemistry knowledge base to integrate sparse mining literature data
- – Automating article discovery, method extraction, and structured table understanding
- – Supporting USGS critical mineral resource estimation

[2] Enhancing Scalability of Knowledge Graphs for Enterprise Defense Solutions (STTR Phase I) [Funded by **U.S. Air Force Research Laboratory (AFRL)**, led by SIMBA Chain, Inc.]
[3] Temporal Knowledge Graphs for Multi-Hop Pattern Recognition

❖ **Machine Learning Researcher** — *Jan 2025 – Jul 2025*
Upwork, Freelance (Remote)
■ Awarded the 'Rising Talent' badge on Upwork within six months of joining, in recognition of my in-demand skills, strong performance, and impressive professional background.

❖ **Lead Researcher** — *Mar 2023 – Aug 2025*
Advanced Machine Intelligence Research Lab (AMIRL), American International University-Bangladesh (AIUB)
Roles: Research Assistant (Mar 2023 - Dec 2023), Researcher (Dec 2023 - Feb 2024), Lead Researcher (May 2024 - Aug 2025)
Supervisors: Prof. M. F. Mridha and Prof. Nilanjan Dey

◆ Collaborators: Prof. R. Simon Sherratt (IEEE Fellow, IET Fellow), Prof. Jungpil Shin, Prof. Yuichi Okuyama, Prof. Zeyar Aung, Prof. Yutaka Watanobe, Prof. Md. Rashedul Islam, Prof. Md. Jakir Hossen, Prof. Md. Abdul Hamid, Prof. Muhammad Mostafa Monowar

■ Published **10+ WoS Q1** journal articles and **CORE-ranked** conference articles (concentration: DL, QML, GNN, XAI, conformal prediction, human-in-the-loop, NLP, and operations research).

❖ Visiting Researcher (VR) *Mar 2024 – Mar 2025*

Physics and Biology Unit, Okinawa Institute of Science and Technology Graduate University (OIST), Japan
Supervisor: Prof. Jonathan Miller [BS (Yale); PhD Biology (Cambridge); PhD Physics (Caltech)]
Research project: Evolutionary Dynamics of Strongly Conserved Sequences in Vertebrates and Insects [Code Repository]

■ [FY2023 Annual Report] [OIST Affiliation]

❖ Visiting Research Student (VRS) *Feb 2023 – Feb 2024*

Physics and Biology Unit, OIST, Japan
Supervisor: Prof. Jonathan Miller [BS (Yale); PhD Biology (Cambridge); PhD Physics (Caltech)]
Research project: Evolutionary Dynamics of Strongly Conserved Sequences in Vertebrates and Insects [Certificate]
Collaborators: Dr. Lucia Žifčáková, Dr. Priscila Do Nascimento Biller, Dr. Zdenek Lajbner, and Dr. Reuven Pnini

■ Critically analyzed and visually represented all potential combinations of inter-gap segments (IGS), ancestral repeats (ARs), and contiguous mismatched ARs in human/mouse and human/gorilla genome alignments, focusing on both DNAs and repetitive sequences.
■ Successfully replicated the findings of the neutral indel model proposed by Lunter, Pointing, and Hein (2006).

❖ Research Lead *May 2022 – Mar 2023*

Research Camp 02, Scholarship School BD, Bangladesh
Supervisor: Dr. Mohammad Arafat Hussain (Post-doctoral Research Fellow at Image, Informatics & Intelligence Research Lab, Harvard Medical School; PhD in Biomedical Eng., UBC Canada; MASc in Biomedical Eng., UBC)

■ Led the research team of 17 fellow researchers as a co-first author on a project titled "Ultrasound-Based AI for COVID-19 Detection: A Comprehensive Review of Public and Private Lung Ultrasound Datasets and Studies".
■ Contributed to writing the original manuscript, software implementation, and data curation, and served as a corresponding author for the entire communication with the journal.

❖ Research Intern (RI) *Oct 2021 – Mar 2022*

Physics and Biology Unit, OIST, Japan
Supervisor: Prof. Jonathan Miller [BS (Yale); PhD Biology (Cambridge); PhD Physics (Caltech)]

■ Awarded a full-funded scholarship with a daily allowance of JPY 2400 per working day [Offer Letter] [RI Agreement] [Internship Certificate] (acceptance rate: **14%**)
■ Tracked erroneous out-of-bound PCS coordinates generated by Nash and Lenhard (2018), utilizing R and Bedtool, and resolved complexity issues using Python 3.10.
■ Demonstrated shell scripting and parallel computing proficiency on the HPC Deigo cluster.
■ Conducted research on perfectly conserved sequence (PCS) length distributions of UCSC 44 pairwise genome sequences.
■ Analyzed quantile kurtosis of PCS lengths proposed by Nash and Lenhard (2018) and identified a 'knee' in the PCS distributions of the heavy-tailed region.
■ Optimized Nash and Lenhard's 3 R scripts for PCS generation, quantile kurtosis analysis, and genomic regulatory blocks (GRBs), reducing time and memory complexity. Successfully reproduced PCS coordinates following UCSC format and fixed genome coordinate-related errors in R's Bioconductor package.

❖ Research Intern *May 2021*

UiT - The Arctic University of Norway
Supervisors: Prof. Aleksander Pedersen, Prof. Rune Dalmo, Ghada Bouzidi
Internship Mentor: Prof. Per Arne Sundsbø

■ Conducted comprehensive data and statistical analysis on the Narvik road dataset as part of the DIT4BEARs Smart Road project. [Internship Report] [Project Source Code] [Certificate]
■ Designed, implemented, and evaluated ML models that successfully identified six road states, addressing the challenges of winter weather conditions in the Barren Euro-Arctic region.
■ Proposed a novel safety metric and utilized Ridge, Lasso, Elastic Net, Linear Regression, and XGBRegressor to forecast its values.

Publications

I have 420 citations according to Google Scholar as of February 11, 2026 (h-index = 12, i10-index = 13)
* *Denotes co-first authorship.*

Journal Articles

[J-14] **Jahin, M. A.**, Masud, M. A., Mridha, M. F., Dey, N., & Aung, Z. (2026). Quantum Rationale-Aware Graph Contrastive Learning for Jet Discrimination. ***TMLR***.

[J-13] **Jahin, M. A.**, Mridha, M. F., Dey, N, & and Hossen, M. J. (2026). Human-in-the-Loop Feature Selection Using Interpretable Kolmogorov-Arnold Network-based Double Deep Q-Network. ***IEEE Open Journal of Computer Society***, *7*, 389-403.

[J-12] **Jahin, M. A.**, Naife, S. A., Lima, F. T. J., Mridha, M. F., & Hossen, M. J. (2025). Predicting Male Domestic Violence Using Explainable Ensemble Learning and Exploratory Data Analysis. ***Discover Applied Sciences***, *8(26)*.

[J-11] **Jahin, M. A.**, Masud, M. A., Mridha, M. F., Aung, Z., & Dey, N. (2025). KACQ-DCNN: Uncertainty-Aware Interpretable Kolmogorov-Arnold Classical-Quantum Dual-Channel Neural Network for Heart Disease Detection. ***Computers in Biology and Medicine***, *197*, 110976.

[J-10] **Jahin, M. A.***, Shahriar, A.*, & Amin, M. A. (2025). MCDFN: Supply Chain Demand Forecasting via an Explainable Multi-Channel Data Fusion Network Model. ***Evolutionary Intelligence***, *18*(3), 66.

[J-9] Morshed, A., Shihab, A. A., **Jahin, M. A.***, Nahian, M. J. A., Sarker, M. M. H., Wadud, M. S. I.*, Uddin, M. I., Siraji, M. I., Anjum, N., Shristy, S. R., Rahman, T., Khatun, M., Dewan, M. R., Hossain, M., Sultana, R., Chakma, R., Emon, S. B., Islam, T., & Hussain, M. A.* (2025). Ultrasound-Based AI for COVID-19 Detection: A Comprehensive Review of Public and Private Lung Ultrasound Datasets and Studies. ***Multimedia Tools and Applications***.

[J-8] **Jahin, M. A.**, Masud, M. A., Suva, M. W., Mridha, M. F., & Dey, N. (2025). Lorentz-Equivariant Quantum Graph Neural Network for High-Energy Physics. ***IEEE Transactions on Artificial Intelligence***, 1–11.

[J-7] **Jahin, M. A.**, Shovon, M. S. H., Mridha, M. F., Islam, M. R., & Watanobe, Y. (2024). A hybrid transformer and attention based recurrent neural network for robust and interpretable sentiment analysis of tweets. ***Scientific Reports***, *14*(1), 24882.

[J-6] Shahriar, H.*, Islam, M. S., **Jahin, M. A.***, Ridoy, I. A., Prottoy, R. R., Abid, A., & Mridha, M. F. (2024). Exploring Internet of Things Adoption Challenges in Manufacturing Firms: A Delphi Fuzzy Analytical Hierarchy Process Approach. ***PLoS ONE***, *19*(11), e0311643.

[J-5] Saha, A. K.*, **Jahin, M. A.***, Rafiquzzaman, M., & Mridha, M. F. (2024). Ergonomic Design of Computer Laboratory Furniture: Mismatch Analysis Utilizing Anthropometric Data of University Students. ***Heliyon***, *10*(14).

[J-4] Ahmad, K.*, Islam, M. S., **Jahin, M. A.***, & Mridha, M. F. (2024). Analysis of Internet of things implementation barriers in the cold supply chain: An integrated ISM-MICMAC and DEMATEL approach. ***PLoS ONE***, *19*(7), e0304118.

[J-3] **Jahin, M. A.**, Shovon, M. S. H., Shin, J., Ridoy, I. A., & Mridha, M. F. (2024). Big Data - Supply Chain Management Framework for Forecasting: Data Preprocessing and Machine Learning Techniques. ***Archives of Computational Methods in Engineering***, *31*(6), 3619–3645.

[J-2] **Jahin, M. A.**, & Talapatra, S. (2024). A Natural Language Processing-Based Classification and Mode-Based Ranking of Musculoskeletal Disorder Risk Factors. ***Decision Analytics Journal***, *11*, 100464.

[J-1] **Jahin, M. A.**, Shovon, M. S. H., Islam, M. S., Shin, J., Mridha, M. F., & Okuyama, Y. (2023). QAmplifyNet: Pushing the boundaries of supply chain backorder prediction using interpretable hybrid quantum-classical neural network. ***Scientific Reports***, *13*(1), 18246.

Under-Review Journal/Conference Articles

[U-15] Trishna, N. J., Mridha, M. F., Mahmud, S M. H., **Jahin, M. A.**, & Aung, Z. (2026). High-Responsiveness Temporal Graph Neural Network for Early Prediction of Patient Deterioration in Intensive Care Units. Under review at ***Communications Medicine***.

[U-14] Trishna, N. J., **Jahin, M. A.**, Hossen, M. J., & Mridha, M. F. (2026). Interpretable Spatiotemporal Graph Neural Networks for Precise Brain Tumor Localization and Smart MRI Optimization. Under review at ***Journal of Magnetic Resonance Imaging***.

[U-13] **Jahin, M. A.**, Fuad, T. R., Pujara, J., & Knoblock, C. (2026). ChronoSpike: An Adaptive Spiking Graph Neural Network for Dynamic Graphs. Under review at ***NIPS 2026***.

[U-12] Masud, M. A., **Jahin, M. A.**, & Hasan, M. (2026). Stabilizing Federated Learning under Extreme Heterogeneity with HeteRo-Select. Under review at ***IEEE TAI***.

[U-11] **Jahin, M. A.**, Abid, A., & Mridha, M. F. (2026). Quantum-Informed Contrastive Learning with Dynamic Mixup Augmentation for Class-Imbalanced Expert Systems. Under review at ***Neurocomputing***.

[U-10] Nasif, S. M.*, **Jahin, M. A.***, & Mridha, M. F. (2026). Reinforcement-Guided Hyper-Heuristic Hyperparameter Optimization for Fair and Explainable Spiking Neural Network-Based Financial Fraud Detection. Under review at ***Knowledge-Based Systems***.

[U-9] **Jahin, M. A.**, Soudeep, S., Mridha, M. F., Monowar, M. M., & Hamid, M. A. (2026). Physics-Informed Graph Neural Networks for Transverse Momentum Estimation in CMS Trigger Systems. Under review at ***Computer Physics Communications***.

[U-8] **Jahin, M. A.**[*], Soudeep, S.[*], Mridha, M. F., & Dey, N. (2026). Soybean Disease Detection via Interpretable Hybrid CNN-GNN: Integrating MobileNetV2 and GraphSAGE with Cross-Modal Attention. Under review at ***SN Computer Science***.

[U-7] Islam, M. A., Mridha, M. F., **Jahin, M. A.**, & Dey, N. (2026). A Unified Framework for Evaluating the Effectiveness and Enhancing the Transparency of Explainable AI Methods in Real-world Applications. Under review at ***SN Computer Science***.

[U-6] Soudeep, S.[*], **Jahin, M. A.**[*], & Mridha, M. F. (2026). Interpretable Dynamic Graph Neural Networks for Small Object Detection and Tracking in Traffic Surveillance. Under review at ***Applied Soft Computing***.

[U-5] Uddin, M. K., Islam, M. S., **Jahin, M. A.**, Irfan, M. T. H., Seam, M. S. I., & Mridha, M. F. (2025). Designing Cellular Manufacturing System in Presence of Alternative Process Plans. Under review at ***IET Collaborative Intelligent Manufacturing***.

[U-4] Uddin, M. K., Islam, M. S., **Jahin, M. A.**, Seam, M. S. I., & Mridha, M. F. (2025). Solving Generalized Grouping Problems in Cellular Manufacturing Systems Using a Network Flow Model. Under review at ***Journal of Intelligent Manufacturing and Special Equipment***.

[U-3] **Jahin, M. A.**, Mridha, M. F., Aung, Z., Dey, N., & Sherratt, R. S. (2025). TriQXNet: Forecasting Dst Index from Solar Wind Data Using an Interpretable Parallel Classical–Quantum Framework with Uncertainty Quantification. Under review at ***Quantum Machine Intelligence***.

[U-2] Rahman, M. M.[*], **Jahin, M. A.**[*], Islam, M. S., & Mridha, M. F. (2025). Optimizing Container Loading and Unloading through Dual-Cycling and Dockyard Rehandle Reduction Using a Hybrid Genetic Algorithm. Under review at ***Journal of Marine Science and Technology***.

[U-1] **Jahin, M. A.**, Naife, S. A., Saha, A. K., & Mridha, M. F. (2025). AI in Supply Chain Risk Assessment: A Systematic Literature Review and Bibliometric Analysis. Under review at ***SN Business & Economics***.

Conference Articles and Book Chapters

[C-6] **Jahin, M. A.**, Soudeep, S., Mridha, M. F., Fahad, N., & Hossen, M. J. (2025, October 9-13). DyCAF-Net: Dynamic Class-Aware Fusion Network. In *Proceedings of the 12th IEEE International Conference on Data Science and Advanced Analytics **(DSAA'25)***. Birmingham, UK. [CORE A, Acceptance Rate: 85/226=37.61%]

[C-5] **Jahin, M. A.**, Fuad, T. R., Mridha, M. F., Fahad, N., & Hossen, M. J. (2025, October 19). *AdeptHEQ-FL: Adaptive Homomorphic Encryption for Federated Learning of Hybrid Classical-Quantum Models with Dynamic Layer Sparing* [Poster Presentation]. 1st International Workshop on Biomedical Image and Signal Computing for Unbiasedness, Interpretability, and Trustworthiness **(BISCUIT @ ICCV'25)**. In *2025 IEEE/CVF International Conference on Computer Vision (ICCV) Workshops*, Honolulu, Hawaii. [CORE A*] [Poster]

[C-4] **Jahin, M. A.**, Soudeep, S., Aditta, A. R., Mridha, M. F., Fahad, N., Hossen, M. J. (2025, August 16). In Ma, Y., et al. (Eds), *Vision Transformers for End-to-End Quark-Gluon Jet Classification from Calorimeter Images* [Poster Presentation]. Generalizing from Limited Resources in the Open World **(GLOW @ IJCAI'25)**, Montreal, Canada. *Communications in Computer and Information Science: Vol. 2640, pp. 135–150.* Springer. [CORE A*] [Poster]

[C-3] **Jahin, M. A.**[*], Soudeep, S.[*], Farid, F. A., Mridha, M. F., Kabir, R., Islam, M. R., & Karim, H. A.(2025, July 1-4). *CAGN-GAT Fusion: A Hybrid Contrastive Attentive Graph Neural Network for Network Intrusion Detection.* In H. Fujita, Y. Watanobe, M. Ali, & Y. Wang (Eds), *Advances and Trends in Artificial Intelligence. Theory and Applications. 38th International Conference on **IEA/AIE***, Kitakyushu, Japan. (Lecture Notes in Computer Science: Vol. 15707, pp. 415–428). Springer. [CORE C, Acceptance Rate: 89/130=68.46%]

[C-2] Žifčáková, L., **Jahin, M. A.**, & Miller, J. (2022, December 13-15). *Perfectly conserved sequences (PCS) between human and mouse are significantly enriched for exonic small proteins* [Poster presentation]. Bioinformatics and Computational Biology Conference **(BBCC'22)**, Virtual. [Poster]

[C-1] Žifčáková, L., & **Jahin, M. A.** (2023, July 23-27). *Perfectly conserved sequences (PCS) between human and mouse are significantly enriched for small-protein coding sequence* [Poster presentation]. Society for Molecular Biology and Evolution **(SMBE'23)**, Ferrara, Emilia-Romagna, Italy. [Poster]

Research Internship Report

[R-1] **Jahin, M. A.**, & Krutsylo, A. (2021). DIT4BEARs Smart Roads Internship (arXiv:2107.06755). arXiv.

Grant/Funding

Competitive Research Funding — AI

[1] University of Aizu (Japan) (×2) for [J-1] & [J-3] — *Research Sponsor:* Prof. Jungpil Shin — *2023 – 2024*

[2] Khalifa University (UAE) (×3) for [J-11], [U-3] & [U-10] — *Research Sponsor:* Prof. Zeyar Aung — *2024 – Present*

[3] Hamad Bin Khalifa University (Qatar) (×1) for [J-10] — *Research Sponsor:* Prof. Md Al Amin — *2024 – 2025*

[4] University of Aizu (Japan) (×1) for [J-7]— *Research Sponsor:* Prof. Yutaka Watanobe — *2024*

[5] Multimedia University (Malaysia) (×4) for [J-12], [J-13], [C-3], [C-4], [C-5], & [C-6] — *Research Sponsors:* Prof. Md. Jakir Hossen & Prof. Hezerul Abdul Karim — *2025*

Honors and Scholarships

□ **Highly Commended Research Awardee (x2 Articles) — The Global Undergraduate Awards (GUA)** 2025
Recognized in the top 10% globally in the Computer Science category for 2 undergraduate papers [U-14] & [C-6] and the only recipient worldwide in 2025 to receive dual commendations [Honor] [Certificate]

□ **Viterbi Graduate School Fellowship — University of Southern California** 2025–2026
Prestigious first-year PhD fellowship awarded for exceptional academic promise. Includes $44,290 annual stipend, full tuition (up to 36 units/year), transportation, student programming, health & dental insurance, and summer support.

□ **Champion — CS50x Puzzle Day — Harvard University — Meta** 2025
Led a 4-person international team (Bangladesh, USA, India, and Pakistan) and solved advanced 9/9 puzzles (including Metapuzzle) [Certificate]

□ **Student Researcher of the Year Award 2024 — KUET Research Society** 2024
Published the highest number of high-impact research articles (Oct 2023 – Nov 2024) in KUET [Award]

□ **MIT Solve — 2024 Global Health Equity Challenge** 2024
Founded SpecX, an XAI-powered web app, for sentiment-driven disease profiling & specialist allocation [Solution]

□ **Champion — CS50x Puzzle Day — Harvard University — Meta** 2024
Led a 5-person international team (Bangladesh, USA, Morocco, and Pakistan) and solved advanced 9/9 puzzles (including Metapuzzle) [Certificate]

□ **Dean's Award (x3) — KUET** 2023
Received 3 Dean's awards in recognition of achieving annual GPAs $\geq$ 3.75 out of 4.00 in three consecutive years of undergraduate classes [Certificate]

□ **NASA Space Apps Challenge — Global Nominee** 2023
Led a 5-person team and forecast geomagnetic storms using hybrid deep neural networks from satellite data — [Project] [30 seconds of glory video]

□ **Finalist — HONDA Y-E-S (Young Engineer and Scientist's) Award 2022** 2023
Awarded for being among the top 15 Bangladeshi young engineering undergrad student scientists [Award & certificate]

□ **Junior Research Fellowship — Bangladesh Space Research and Remote Sensing Organization** 2022
Nominated as the junior-most research fellow by SPARRSO among the other excellent 55 undergraduate researchers for the project titled "Disaster Damage Mitigation by Multispectral Remote Sensing Satellite Image Data Analysis: A Deep Learning Approach" [Project nomination] [Presentation video]

□ **Qiskit Gold Level Translator — English to Bengali** 2021
Translated 22101 and proofread 25375 words of IBM Qiskit's first-ever textbook, collaborating with the West Bengal and Bangladeshi Qiskit translator team of 36 members [Certificate]

□ **Top 6 among 385 teams — Entrepret Season-2: Crafting Visions** 2021
Developed a feasible and sustainable business canvas model for our Git and Jenkins integrated freelancing startup [Case solution] [Finalist]

□ **Top 500 — Google Android App Developer Challenge** 2021
Engineered a countdown timer app on *Android Studio* with *Jetpack Compose Beta* using Kotlin language [Source Code] [Google swags]

□ **Global Champion — Smart Roads Hackathon** 2021
Executed a 2-person team and devised an ML model to forecast winter road friction and was offered a 1-month research internship at *UiT - The Arctic University of Norway* [Project Page]

□ **Winner — ISCEA Ptak Prize Global SCM Case Competition** 2020
Led a 4-person team and achieved 70% scholarship for completing the course for the professional certification titled *Certified Supply Chain Analyst (CSCA)* [Case solution] [Certificate]

□ **Champion — CS50x Puzzle Day (Fall) — Harvard University** 2020
Spearheaded a 4-person international team (Bangladesh, UK, Pakistan, and Mexico) and solved advanced 8/8 puzzles [Certificate]

□ **Gold Honor — Ranked top 3% — IAAC** 2020
International Astronomy & Astrophysics Competition [Solution][Final round certificate]

□ **Champion — CS50x Puzzle Day (Spring) — Harvard University** 2020
Led a 3-person international team by fostering diversity & inclusion (Bangladesh, Brazil, and India) and solved advanced 8/8 puzzles [Certificate]

□ **International Asteroid Search Collaboration — NASA** 2020
Administered a 4-person team and discovered 2 main belt asteroids by analyzing Pan-STARRS images using *Astrometrica* software [Certificate]

□ **Gold Honor — Ranked top 5% — IYMC** 2019
International Youth Math Challenge [Solution][Final round certificate]

□ **Government Board Merit-based Scholarship (x4)** 2010 – 2018
PSC (2010; 17th in Rajshahi Board; awarded for 2 years), JSC (2013; awarded for 2 years), SSC (2016; awarded for 2 years), HSC (2018; **awarded throughout 4-year B.Sc.**) Govt. Board Exams

Teaching Experience

Intro to Programming with Python Jan 2022
Mini-Course Teacher, OIST, Japan
◇ Topics covered: Intro, Anaconda, variables, lists, strings, control structures [Course materials & details]

◇ Fellow Teachers: Dr. Nicholas Wardhana and Dr. Jeremie Gillet

Tutorials

Operations Research Jan 2023
- Developed and presented the first-ever comprehensive Bengali online tutorials on Operations Research topics, facilitating 3rd-year IPE students.
- Topics covered: Simplex Method, Two-Phase, Big M, Graphical Sensitivity Analysis, TORA. [YouTube Playlist]
- Reference book: "Operations Research – An Introduction" by Professor Hamdy A. Taha.

Leadership & Advisory Roles

KUET Research Society *Oct 2023 – May 2024*
Co-founder & President
• Served as an Executive Committee Member and President of the Industrial Engineering and Management Unit
• Supervising (as an alumnus) 6 groups of research students concentrating on ML-DL and computational fuzzy logic, fostering cross-departmental research collaboration
• Teaching (as an alumnus) scientific research methodology, research ethics, and journal article formatting, meeting publication criteria, and acquiring funding for publications

USC CS Undergraduate Mentorship Program (Fall 2025) *Oct 2025 – Present*
Graduate Mentor
• Mentoring 2 undergraduate CS students at USC on research preparation, course planning, and pathways to graduate study through recurring one-on-one advising
• Advising on faculty outreach, independent skill development, and research-focused internships and REU opportunities

Professional Service

Peer Reviewer *Jul 2023 – Present*
Verified by Web of Science [ResearcherID]
□ PLOS One
□ Quantum Machine Intelligence (Springer Nature)
□ Information Systems (Elsevier)
□ IEEE Transactions on Biomedical Engineering
□ ICML 2025 Workshops: LXAI, AIW, DataWorld
□ IEEE Transactions on Systems, Man and Cybernetics: Systems
□ Scientific Reports (Nature Portfolio)
□ ACM Transactions on Intelligent Systems and Technology
□ Expert Systems with Applications (Elsevier)
□ IEEE Access
□ Neural Networks (Elsevier)
□ Computers & Industrial Engineering (Elsevier)
□ Multimedia Tools and Applications (Springer Nature)
□ Engineering Applications of Artificial Intelligence (Elsevier)
□ The Journal of Supercomputing (Springer Nature)
□ Cluster Computing (Springer Nature)
□ Journal of Contemporary African Studies (Taylor & Francis)
□ Journal of Multidisciplinary Healthcare (Taylor & Francis)
□ 7th European Conference on Industrial Engineering and Operations Management (Augsburg, Germany, July 2024)

Professional Memberships

† ACM Student Member (USC ACM Chapter) [mjahin@acm.org] [Website] *Aug 2025 – Present*
† IEEE Graduate Student Member [Member # 96981120, Coastal Los Angeles Section] *Sep 2025 – Present*
† IEEE Computational Intelligence Society Member *Sep 2025 – Present*
† Quantum Technical Community, IEEE Computer Society *Sep 2025 – Present*
† IEEE Communications Society Member *Sep 2025 – Present*
† IEEE Young Professionals *Sep 2025 – Present*

Skills

Programming
Advanced and Proficient in: Python, C/C++, R, SQL, SAS, Data Structure and Algorithm, Object Oriented Programming
Familiar with: Kotlin
Machine Learning: Classical Deep Learning, Quantum Machine Learning (Qiskit, Pennylane, TorchQuantum), XAI, NLP, DASK: Parallel Computing, Tensorflow, Keras, PyTorch, IBM Watson
Data Analysis and Optimization: Microsoft Excel, IBM SPSS, Minitab, TORA, Gurobi, Beautiful Soup, Biopython, Bioconductor, NetworkX, OpenCV
High-Performance Scientific Computing: Deigo & Saion Cluster (OIST)
Operating System: Linux, Unix, Windows
Version Control: Git Bash, Github, GitLab
Product Design: AutoCAD 2021, SolidWorks 2022, Unity 2D
Referencing Software: Zotero, Mendeley

Reviewing & Bibliometric Analysis: Publish or Perish 8.0, Gephi, VOSviewer
Writing tools: LaTeX, Microsoft Word
Languages: American English, Bengali (Native), Hindi

Certifications

MITx: CTL.SC4x: Supply Chain Technology and Systems (Grade: 75%)
MITx: 6.431x: Probability - The Science of Uncertainty and Data (Grade: 91%)
MITx: CTL.SC0x: Supply Chain Analytics (Grade: 83%)
MITx: 2.961.2x: Management in Engineering: Strategy and Leadership (Grade: 77%)
HarvardX: PH125.1x: Data Science: R Basics (Grade: 83%)
Delftx: UnixTx: Unix Tools: Data, Software and Production Engineering
TAUx, IsraelX: Unlocking Information Security: Part 1
ISCEA: Certified Supply Chain Analyst (Grade: 88%)
Google: IT Technical Support Fundamentals
Google: Crash Course on Python
Google: The Bits and Bytes of Computer Networking
UCSanDiegoX: DSE200x: Python for Data Science (Grade: 89%)
Georgia Tech: Speak English Professionally: In Person, Online & On the Phone
IBM: AI Chatbots without Programming
IBM: PY0101EN: Python 101 for Data Science
Microsoft: Introduction to Artificial Intelligence (AI)