Md Asif Bin Syed

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Employment History

Jan 2024 – Present

Sr. Supply Chain Data Analyst,
The Home Depot, Atlanta, GA

- Led a team of seven Data Scientists and Software Engineers to develop a **SmartFulfill agent** using offline RL, optimizing fulfillment decisions and **reducing on-time delivery failures by 4.5%, retaining $6.5M in customer spending**.
- Conducted **statistical analysis on 10 million orders** over the R12M period to identify key drivers impacting on-time delivery.
- Built a machine learning model to forecast on-time delivery with **84 percent accuracy**, and currently collaborating with the sourcing team to embed the model into sourcing logic.
- Created a dashboard to monitor ML model performance for sourcing optimization, capable of detecting nearly 50 percent of on-time completion failures.
- Designed a dashboard to track the "Ship from Best Location" initiative launched by leadership, uncovering a 500K additional order opportunity across various ship types to enhance speed-to-customer.
- Supporting research on order split patterns to enhance visibility for senior leadership and identify areas to refine and optimize split logic.

Supply Chain Data Analyst,
The Home Depot, Atlanta, GA

- Developed a SQL workbook to calculate recommended pallet counts, validated results through an API endpoint, and constructed a **pallet compliance dashboard** for stakeholders, potentially generating **annual savings of $2 million**.
- Optimized the truck type compliance dashboard, reducing load time from 226 to 2.56 seconds (**100x improvement**).
- Developed a Python-based "**Control Tower**" to track vehicle rule changes and enhance Truck Type Model accuracy.
- Collaborated with Online Delivery Analytics team to devise an optimization model to pinpoint the optimal carrier for each vendor, maximizing discounts from the primary carriers and **potentially yielding over $30 million in savings.**
- Consistently delivered on multiple ad-hoc requests, including effectiveness analysis of new sprinter vans, rural area box additions, and extraction of pallet data for MDS.

Employment History (continued)

Jan 2023 – Dec 2023

Logistics Purchasing Co-op,
Volvo Group Truck Operations, Greensboro, NC.

- Won the **Global Volvo Group Idea of the Month Award** for Saving $200k in Purchasing Logistics Using AI solution.
- Worked as an Analyst for the team for providing the sustainable and efficient logistics solution **reducing inbound carbon emissions by a remarkable 500 tonnes** through the use of analytical tools and AI.
- Led data analysis and presented the findings to the stakeholders for a contingency plan involving an at-risk carrier and collaborated with cross-functional teams to facilitate **transition of $12M annual business** to backup carriers.

Aug 2021 – Dec 2022

Graduate Research Assistant & Graduate Teaching Assistant
West Virginia University, Morgantown, WV.

- Led the Artificial Intelligence research to improve the Marine surveillance and published articles in **Q1 journals**
- Authored a **National Science Foundation (NSF)**-sponsored Research study on the forecasting of **cardiovascular disease rates in Appalachian states in the United States** using social media data analytics.
- Published **several IEEE conference proceedings** on the application of Deep learning in Health informatics such as predicting PCOS and pediatric bone age prediction.
- Published conference proceedings in **detecting the satellite and debris using the images from GOES-R spacecraft by NASA.**

Feb 2021 – Jun 2021

Executive Industrial Engineer
Vanguard Dresses Limited , Chattogram, Bangladesh.

- Led a Kaizen team of 5 members overseeing 700 workers, **resulting in a 5% reduction** in rework through the successful implementation of the Kaizen project.
- Developed a Power BI dashboard to monitor skill metrics for 200 workers using MS Excel data, presenting insights to management and proposing strategies for effective line balancing.

Education

2021 – 2023

MS in Industrial Engineering, West Virginia University
CGPA: 3.62/4.00
Thesis title: *Spatio-Temporal Deep Learning Approaches for Addressing Track Association Problem using Automatic Identification System (AIS) Data*

Education (continued)

2016 – 2020 **B.Sc. Industrial and Production Engineering, Shahjalal University of Science and technology**
CGPA: 3.61/4.00
Thesis title: *Grey-Taguchi Approach for Optimizing Fused Deposition Modeling Process in Terms of Mechanical Properties and Dimensional Accuracy.*

Research Publications

Journal Articles

1. T. Haque, **M. A. B. Syed**, B. Jeong, *et al.*, "Towards efficient real-time video motion transfer via generative time series modeling," *arXiv preprint arXiv:2504.05537*, 2025.
2. **M. A. B. Syed**, M. R. Hasan, N. I. Chowdhury, M. H. Rahman, and I. Ahmed, "A systematic review of time series algorithms and analytics in predictive maintenance," *Decision Analytics Journal*, p. 100 573, 2025.
3. T. Haque, **M. A. B. Syed**, S. Das, and I. Ahmed, "Advancing marine surveillance: A hybrid approach of physics infused neural network for enhanced vessel tracking using automatic identification system data," *Journal of Marine Science and Engineering*, vol. 12, no. 11, p. 1913, 2024. DOI: https://doi.org/10.3390/jmse12111913.
4. **M. A. B. Syed** and I. Ahmed, "A cnn-lstm architecture for marine vessel track association using automatic identification system (ais) data," *Sensors*, vol. 23, no. 14, p. 6400, 2023. DOI: 10.3390/s23146400.
5. **M. A. B. Syed**, Q. Rhaman, H. M. Shahriar, and M. M. A. Khan, "Grey-taguchi approach to optimize fused deposition modeling process in terms of mechanical properties and dimensional accuracy," *Journal of Engineering Research and Innovation Education*, vol. 4, no. 1, pp. 38–52, Jun. 2022.
6. M. H. Rahman, M. R. Hasan, N. I. Chowdhury, **M. A. B. Syed**, and M. U. Farah, "Predictive health analysis in industry 5.0: A scientometric and systematic review of motion capture in construction," *Digital Engineering*, p. 100 002, 2024. URL: https://doi.org/10.1016/j.dte.2024.100002.
7. H. Khosravi, M. R. Shafie, A. S. Raihan, **M. A. B. Syed**, and I. Ahmed, "Optimizing forest fire prediction: A comparative analysis of machine learning models through feature selection and time-stage evaluation," 2023. URL: https://www.preprints.org/manuscript/202312.0577/v1.
8. M. R. Hasan, N. I. Chowdhury, M. H. Rahman, **M. A. B. Syed**, and J. Ryu, "Analysis of the user perception of chatbots in education using a partial least squares structural equation modeling approach," 2023. URL: https://doi.org/10.1016/j.chbah.2024.100098.

Conference Proceedings

1. M. Y. Ahamed, **M. A. B. Syed**, M. N. Tani, T. Tasnim, and A. Z. S. B. Habib, "A novel approach to menstrual cycle prediction using gan-generated data and transformer model for tabular data," in *2024 IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON-ECE)*, IEEE, 2024, pp. 233–238.
2. **M. A. B. Syed**, Q. Rhaman, and S. Sushil, "Federated learning in manufacturing: A systematic review and pathway to industry 5.0," in *2023 5th International Conference on Sustainable Technologies for Industry 5.0 (STI)*, IEEE, 2023, pp. 1–6.
3. A. Z. S. B. Habib, **M. A. B. Syed**, M. E. Islam, and T. Tasnim, "Investigation of polycystic ovary syndrome (pcos) diagnosis using machine learning approaches," in *2023 5th International Conference on Sustainable Technologies for Industry 5.0 (STI)*, IEEE, 2023, pp. 1–6.

4. A. Z. S. B. Habib, M. E. Islam, **M. A. B. Syed**, M. Y. Ahamed, and T. Tasnim, "Pediatric bone age prediction using deep learning," in *2023 26th International Conference on Computer and Information Technology (ICCIT)*, IEEE, 2023, pp. 1–6.

5. M. Y. Ahamed, **M. A. B. Syed**, P. Chatterjee, and A. Z. S. B. Habib, "A deep learning approach for satellite and debris detection: Yolo in action," in *2023 26th International Conference on Computer and Information Technology (ICCIT)*, IEEE, 2023, pp. 1–6.

6. A. Z. S. B. Habib, **M. A. B. Syed**, M. T. Islam, and D. Adjeroh, "Cardiovascular disease risk prediction via social media," in *16th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2023)*, 2023. DOI: 10.48550/arXiv.2309.13147.

7. **M. A. B. Syed** and I. Ahmed, "Multi-model lstm for track association problem based on automatic identification system," in *IISE Annual Conference and Expo*, IISE, May 21, 2023.

8. **M. A. B. Syed**, Q. Rhaman, H. M. Shahriar, and M. M. A. Khan, "Grey-taguchi approach for optimizing fused deposition modeling process in terms of mechanical properties and dimensional accuracy," in *International Conference on Engineering Research and Education and School of Applied Sciences & Technology, SUST, Sylhet*, Feb. 2021.

Thesis

1. **M. A. B. Syed**, "Spatio-temporal deep learning approaches for addressing track association problem using automatic identification system (ais) data," 2023. URL: http://doi.org/10.33915/etd.12227.

2. **M. A. B. Syed**, "Grey-taguchi approach for optimizing fused deposition modeling process in terms of mechanical properties and dimensional accuracy," BSc thesis, Department of Industrial, Production Engineering, Shahjalal University of Science, and Technology, Sylhet Bangladesh, 2020.

Conference Posters

1. A. Z. S. B. Habib, **M. A. B. Syed**, M. T. Islam, and D. Adjeroh, *Cardiovascular disease risk prediction via social media*, 2023.

2. **M. A. B. Syed** and I. Ahmed, *1d cnn-lstm architecture inspired track association algorithm for marine vessels*, 2022.

3. **M. A. B. Syed**, I. Ahmed, X. B. Hu, Y. Ding, and T. Galoppo, *Unsupervised learning from data with embedded manifold*, 2022.

Skills

Technical Skills	SQL, Git, Docker, Linux, Kubernetes, Vertex AI, PowerBI, GCP, Minitab, SharePoint, Power Automate, Power Apps, MS Excel (including Solver, VBA, Macros, Pivot Tables, Power Pivot, and Power Query), Tableau, SAP Ariba, SAP MDCS, SolidWorks, MS Project, MS Access, and MPL/CPLEX.
Programming Languages	Python (Pytorch, Tensorflow, Gurobi, Pulp, Cplex, Numpy, Pandas, Matplotlib, Scipy, Seaborn, Keras, Scikit- learn, Tensorflow,), C.
Databases	Google Bigqeury, MySQL and PostgreSQL.
Web Dev	HTML, CSS

Awards and Certifications

Awards

2024 **Finalist for The Home Depot Data Science and Analytics Hackathon(2024)** , Reinforcement Learning to select the optimal fulfillment location to improve on delivery performance.

2023 **Finalist for QCRE Data Challenge 2023**, ML Algorithm Synthesizing Domain Knowledge for Fungal Spores Concentration Prediction.

2020 **University Scholarship for Outstanding Student Performance**, Shahjalal University of Science and Technology.

Certifications

2024 **6.431x: Probability - The Science of Uncertainty and Data** a credential by MITx.

2023 **Microsoft Certified Data Analyst Associate (PL-300)**.

2022 **Six Sigma Green Belt**, Awarded by the Institute of Industrial and Systems Engineers (IISE).

Supply Chain Design, a credential by MITx.

Supply Chain Tools and Technology, a credential by MITx.

Volunteering and Organization Affiliation

- Member of **IISE**
- Member of **INFORMS**
- Volunteered as a **Session Chair** at the INFORMS 2022 Annual Meeting
- Served as a Vice President for **WVU Bangladseh Student Association**