HASIBUL KARIM SHANTO

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OBJECTIVE

Motivated researcher with a strong research interest in Operations Research and its integration with machine learning for advanced and efficient decision making. Skilled in developing interpretable, efficient and adaptive decision making systems. Seeking opportunities in Operations Research and Optimization domain to research and develop intelligent, explainable and data-driven solutions for complex real-world problems.

EDUCATION

Bachelor of Science in Industrial and Production Engineering **[2023]**
Bangladesh University of Engineering and Technology(BUET) Dhaka, Bangladesh
CGPA: 3.53/4.00

Higher Secondary Certificate(HSC) **[2017]**
Dhaka Residential Model College Dhaka, Bangladesh
GPA:5.00/5.00

EXPERIENCE

Solution Engineer [2025 May - Present]
M2SYS Technology | CloudApper AI *Dhaka Office | HQ: Atlanta, GA, USA*

- Built custom SaaS apps for business and management needs using UKG and CloudApper Platform to automate business processes and improve operational efficiency.
- Developed a software solution to automate resume parsing and candidate communication, streamlining the hiring pipeline.
- Built a custom HR system that centralized applicant tracking and interview scheduling.
- Developed a custom payroll calculation solution for a client with employees more than 20000.

Industrial Trainee [2022]
Square Pharmaceuticals PLC. *Kaliakoir, Gazipur-1750, Dhaka, Bangladesh*

- Analyzed the spare parts inventory of the production unit.
- Proposed and developed a multi-criteria classification model of spare parts for spare parts management.

SKILLS

Language Skills	Bangla (Native), English **(IELTS Score:7.5, L:8, R:7.5, W:7.5, S:7)**
Programming Languages	Python, C, MATLAB, JavaScript, SQL
ML/DL Frameworks	TensorFlow, PyTorch, Keras, Scikit-Learn
OR/Optimization Tools	Gurobi, CPLEX
Data Manipulation & Visualization	Pandas, NumPy, Matplotlib, Tecplot 360, MS Excel
AI Technologies	Natural Language Processing (NLP), Large Language Models (LLMs)
Soft Skills	Research, Communication, Collaboration

PUBLICATIONS

2025

1. **Shanto, H. K.**, Koana, U. A., & Rahman, S. (2025). *Multi-Armed Bandits-Based Optimization of Decision Trees.* Accepted in International Conference on Optimization and Applications (ICOA2025). arXiv preprint arXiv:2508.05957. [Preprint]

2. Rahman, S., **Shanto, H. K.**, Koana, U. A., & Danish, S. M. (2025). *Automated Research Article Classification and Recommendation Using NLP and ML.* Accepted in Foundation and Large Language Models (FLLM2025). arXiv preprint arXiv:2510.05495. [Preprint]

2020

1. Rahman, S., et al. (2020). *Measuring the Effectiveness of Code Review Comments in GitHub Repositories: A Machine Learning Approach. Machine Learning and Data Mining in Pattern Recognition, 16*, 35–48. [Paper]

ONGOING RESEARCH WORKS

Conference Paper [Under Preparation]

Topic: A Markov Decision Process Approach to Stability-Aware Decision Tree Modeling for Temporal Healthcare Prediction

- Investigating the integration of Markov Decision Process (MDP) with Decision Tree-based learning to enhance stability, interpretability in clinical decision-making.
- Focused on balancing predictive performance and structural robustness, aiming to resolve one of the major drawbacks of traditional decision trees.
- Developing techniques to incorporate patient-level temporal dynamics into model structure, enabling early and explainable predictions of critical conditions such as sepsis using publicly available ICU datasets.

Conference Paper [Under Preparation]

Topic: Towards Human-Centered Decision Tree Models for Reliable Clinical Predictions

- Experimenting how to enhance model stability and interpretability by aligning split decisions with human-like reasoning.
- Integrating the application of Reinforcement Learning in the generation of optimized Decision Tree-based models.
- Developing a novel decision-tree generation framework that integrates expert knowledge to guide feature prioritization during tree construction.

THESIS

UNDERGRADUATE THESIS [2023]

Topic: Prescription Error Detection: A Natural Language Processing Approach Combined with Outlier Detection Method [Thesis]

Supervisor: Dr. Kais Bin Zaman, Professor, Dept. of Industrial and Production Engineering, BUET

- Proposed framing the prescription error detection task as an outlier detection problem.
- Designed a hybrid Natural Language Processing and Outlier Detection approach to identify prescription errors from textual data.
- Proposed approach achieves an accuracy level of approximately 80%
- Among five different outlier detection algorithms that had been used, Autoencoder and Local Outlier Factor methods demonstrated better performance.

RESEARCH INTEREST

Methodologies

- Operations Research
- Sequential Decision Making
- Reinforcement Learning
- Machine Learning

Applications

- Healthcare Decision-Making
- Data Driven Decision Analysis
- Explainable & Trustworthy AI Systems
- Asset & Resource Allocation