HARIS MD SAHED

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Fukushima, Japan

Professional Summary

Graduate student in Computer Science at the University of Aizu with a background in machine learning and data science. Research experience in extreme event prediction, high-frequency financial data, class imbalance, and nonstationary data. Published in an IEEE conference and have a manuscript currently under review. Current research interests include adaptive machine learning, hybrid AI systems, data mining, and learning from limited and imbalanced data.

Education

The University of Aizu Aizuwakamatsu, Fukushima, Japan
M.S. in Computer Science (ongoing) Aug 2026 – Present
Graduate Program in Computer Science
Supervisor: Prof. Mohamed Hamada

Tokyo International University Tokyo, Japan
B.Sc. in Digital Business & Innovation (AI / Data Science Track) Apr 2022 – Mar 2026
GPA: **3.741 / 4.00**

The University of Aizu Aizuwakamatsu, Fukushima, Japan
Non-Degree Student in Computer Science Apr 2026 – Aug 2026
GPA: **4.00 / 4.00**

Research Experience

Graduate Researcher Aug 2026 – Present
The University of Aizu
Supervisor: Prof. Mohamed Hamada

- Conducting graduate-level research in computer science with a focus on machine learning and data-driven methods.
- Studying adaptive and hybrid machine learning approaches for problems involving healthcare limited data.

Undergraduate Researcher 2024 – 2025
Tokyo International University
Supervisor: Prof. Fatih Ozaydin

- Conducted independent and collaborative research involving literature review, data collection, statistical analysis, model evaluation, and research documentation.
- Retrieved information from academic publications and trusted sources to support research questions and verify findings.
- Reviewed research literature to identify relevant methodologies, previous findings, and relationships among research topics.

Student Assistant (Statistics) 2023 – 2024
Tokyo International University
Prof. Makoto Shimizu

- Reviewed and verified student assignments for accuracy, completeness, and adherence to established evaluation criteria.
- Checked statistical calculations, interpretations, and written explanations for inconsistencies and errors.
- Applied structured grading criteria consistently while reviewing academic work.
- Handled academic materials with professionalism and attention to detail.

Undergraduate Thesis

A Diagnostic-Driven Framework for Selecting Hybrid ML Strategies in Nonstationary and Imbalanced Data Dec 2025
Undergraduate Thesis, Tokyo International University
Advisor: Prof. Fatih Ozaydin

- Conducted an extensive review of prior research on machine learning under class imbalance, nonstationarity, and distribution shift.
- Compared methodologies and empirical findings across multiple research studies to identify appropriate modeling strategies.
- Developed a structured framework for selecting machine learning strategies based on diagnostic evidence.

Publications & Preprints

1. **Haris Md Sahed**, Md Abu Saleh Showrob, Fatih Ozaydin. *Evaluation of Machine Learning and Deep Learning Models for Extreme Climate Event Forecasting.* In: *Proceedings of the 2025 International Conference on Advanced Machine Learning and Data Science (AMLDS)*, Tokyo, Japan, 19–21 July 2025. IEEE. DOI: 10.1109/AMLDS63918.2025.11159347
2. Maorufa Zaman, **Haris Md Sahed**. *Volatility-Aware Extreme Event Detection in High-Frequency Financial Markets.* **arXiv preprint arXiv:2607.17555 [cs.LG]**, 2026. https://arxiv.org/abs/2607.17555

Selected Projects

Bayesian Learning in Text Mining and Deep Learning

- Developed a sentiment classification system using the IMDb 50K movie-review dataset, comparing Naive Bayes, LSTM, and Bayesian Neural Networks (BNNs).
- Applied Monte Carlo Dropout to estimate predictive uncertainty and generate probability distributions rather than only point predictions.
- Compared model accuracy and uncertainty to examine the reliability of sentiment predictions.

Product Growth Prediction under Changing Sales Patterns

- Developed a two-stage machine learning framework to predict whether product sales would increase in the next period and estimate the expected growth amount.
- Engineered monthly sales, lag, rolling, price-change, and transaction-based features from the Online Retail II dataset and applied TF-IDF and K-Means for product clustering.
- Used XGBoost with SMOTE for growth classification and regression models for growth-amount prediction, addressing changing sales patterns and unstable product behavior.

Research & Analytical Skills

Research: Literature Review, Scholarly Search, Source Verification, Research Documentation, Academic Writing, Citation Management

Data Analysis: Data Cleaning, Exploratory Data Analysis, Statistical Analysis, Feature Engineering, Model Evaluation, Reproducible Analysis

Machine Learning: Classification, Regression, Ensemble Learning, Time-Series Analysis, Imbalanced Learning, Anomaly Detection

Technical Skills

Programming: Python, R, SQL, C

Machine Learning / Data Science: Pandas, NumPy, scikit-learn, XGBoost, Random Forest, PyTorch

Statistics: Descriptive Statistics, Hypothesis Testing, Regression, Classification, Time-Series Analysis, Statistical Diagnostics

Tools: LaTeX, Jupyter Notebook, Git/GitHub, Microsoft Office, Tableau

Awards & Honors

- Soka City Hall Scholarship for Undergraduate Students (2023–2026)
- JASSO Scholarship for Privately Financed International Students (2022–2023)

Languages

English: Professional Working Proficiency **Bengali:** Native **Japanese:** Intermediate