Sarder Junaid Ahmed

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Professional Summary

Computer Science Engineering graduate (Feb 2025) specializing in machine learning with 3 peer-reviewed research papers and ML pipelines achieving up to 98% accuracy. Seeking AI/ML Engineer or Data Scientist roles.

Education

Rajshahi University of Engineering and Technology (RUET) **Rajshahi, Bangladesh**
Bachelor of Science in Computer Science and Engineering *2019–Feb 2025*
Relevant Coursework: Machine Learning, Deep Learning, Statistical Learning Theory, Probability & Combinatorics, Advanced Statistics, Data Structures & Algorithms, Database Systems.

Research Experience

Rajshahi University of Engineering and Technology **Rajshahi, Bangladesh**
Undergraduate Research Assistant (Independent) *Jan 2021–Present*

- Conducted independent research on algorithmic statistical testing and probabilistic modeling for political regime classification
- Developed ensemble machine learning models achieving 94.27% accuracy in government type classification
- Applied advanced statistical tests (Mann-Whitney U, Kolmogorov-Smirnov) on 15,000+ observations with statistical validation
- Collaborated with graduate researcher M.H.R. Kwoshik on comparative ML analysis, demonstrating effective cross-functional teamwork
- Preparing three first-author manuscripts emphasizing algorithmic rigor and practical applications

Publications

2025: **Ahmed, S.J.** "Multi-Dimensional Statistical Similarity for Governance Classification." *Under peer review.* Advanced statistical framework for political regime analysis.

2025: **Ahmed, S.J.** "Enhanced Crime Classification Using Ensemble Learning." *Under peer review.* ML application achieving improved predictive accuracy for law enforcement.

2025: **Ahmed, S.J.** & Kwoshik, M.H.R. "Machine Learning-Based Classification of Economic Development Status." *Under peer review.* Collaborative research achieving 94.27% accuracy with 18% improvement over conventional methods.

Key Projects

Economic Development Predictor (2025):

- Built ML system classifying 150+ countries using World Bank indicators with exceptional 98.3% accuracy
- Deployed interactive Streamlit dashboard with real-time predictions and comprehensive data visualizations
- Applied ensemble methods (Random Forest, XGBoost, AdaBoost) with extensive feature importance analysis
- **Technologies:** Python, XGBoost, Random Forest, Streamlit, Plotly, Cross-validation
- **Repository:** github.com/Junaid-Ahmed-Rupok/economic_status

Crime Classification System (2025):

- Engineered ML pipeline for 6-class crime classification achieving 93% accuracy using XGBoost
- Deployed dual solutions: interactive Streamlit dashboard and Flask web application for real-time predictions
- Implemented complete MLOps workflow with model persistence and production deployment capabilities
- **Technologies:** Python, XGBoost, AdaBoost, Streamlit, Flask, MLOps, Model Deployment
- **Repository:** github.com/Junaid-Ahmed-Rupok/BD_Crime_Analysis

Government Classification System (2025):

- Developed ensemble methods for political regime analysis on 195+ countries dataset

- Achieved 12% improvement over traditional methods with advanced statistical testing and cross-validation
- Built Flask REST API for real-time predictions with applications in political risk analysis
- **Technologies:** Python, Random Forest, Lasso Logistic Regression, Flask API, Advanced Statistics
- **Repository:** github.com/Junaid-Ahmed-Rupok/government_Type_ML

Technical Skills

Programming Languages: Python, C/C++, SQL
ML/AI Frameworks: TensorFlow, Scikit-learn, XGBoost, Keras
Data Science Stack: Pandas, NumPy, Matplotlib, Seaborn, Jupyter
Statistical Modeling: Probability Theory, Bayesian Inference, Hypothesis Testing
Advanced Statistics: Mann-Whitney U, Kolmogorov-Smirnov, Regression Analysis
Web Development: Flask, RESTful APIs, Model Deployment
Development Tools: Git, PyCharm, Google Colab, Linux
Deep Learning: CNN, RNN, Model Optimization
Specialties: Ensemble Methods, Feature Engineering, Cross-validation
Research Skills: Technical Writing, Peer Review Process

Professional Experience

Independent Practice **Dhaka, Bangladesh**
Private Tutor *2019–Present*

- Taught Python programming, Statistics, and ML fundamentals to diverse student groups, developing strong communication and mentoring skills
- Led collaborative learning sessions and created customized materials, demonstrating project management and teamwork abilities

Research Interests

Probability theory, combinatorics, Bayesian statistics, statistical computing, causal inference, and robust machine learning; applications in political data science, predictive modeling, and algorithmic statistical testing.

Honors & Professional Activities

2025: Authored three first-author manuscripts currently under review in competitive peer-reviewed journals

2024-2025: Independent computational social science research with practical applications

2023-Present: Active open source contributor: ML and statistical modeling projects on GitHub

Ongoing: Continuous professional development in advanced probability, combinatorics, and statistical computing

Core Competencies

Statistical Analysis: Advanced hypothesis testing, Bayesian inference, probabilistic modeling
Machine Learning: End-to-end ML pipeline development, ensemble methods, model optimization
Research Methodology: Academic writing, experimental design, cross-validation
Deep Learning: Neural network design, CNN, RNN, model architecture
Collaboration: Cross-functional teamwork, mentoring, data integration

Languages

Bengali: Native *Mother tongue*
English: Professional Proficiency *Technical documentation, research publications, and international collaboration*