Shahabub Alam

nabidalam.github.io | github.com/NabidAlam | linkedin.com/in/msanabid

Experience

Deutsches Forschungszentrum für Künstliche Intelligenz, *Research Assistant* *Jan 2025 – Present*
- Developed ML-powered touch models for ToCaro to enhance human-computer interaction.
- Built real-time detection pipelines using Python and statistical models for touch accuracy.
- Improved system responsiveness via interaction modeling and performance tuning.

Technische Universität Berlin, *Student Assistant* *Mar 2024 – Dec 2024*
- Delivered Business Intelligence dashboards that increased transparency by 50%, enabling data driven strategic decisions.
- Applied statistical modeling and Machine Learning to assess technology adoption and provide actionable business insights.
- Optimized data workflows by developing robust SQL pipelines that reduced large dataset processing time by 35%.

ESCP Business School, *Student Assistant* *Apr 2024 – Mar 2025*
- Built NLP-based assistant automating 70% of student queries, reducing manual workload and response time.
- Implemented text mining and AI indexing to improve information access and retrieval efficiency.
- Analyzed chatbot interactions to enhance performance, resulting in 30% increase in user satisfaction.

Universitätsklinikum Essen, *Student Assistant* *Jan 2023 – Jun 2023*
- Automated citation extraction using Python NLP, reducing manual effort by 15% and improving accuracy.
- Built validation tools to ensure accuracy and consistency in PhD research references.

Convince Computer Ltd. & Islam Garments Ltd., *Programmer & Software Developer* *Jul 2017 – Sep 2020*
- Developed ERP system using C#, .NET, ASP.NET & SQL, reducing payroll processing time by 60% and eliminating errors.
- Built ETL pipelines for real-time data integration, reducing reporting time by 40% and optimizing manufacturing processes.
- Created data mining solutions and reporting tools, achieving 25% efficiency improvement in logistics operations.
- Delivered KPI dashboards, enabling real-time data-driven decision making for executives and operational teams.

Skills

Programming & Scripting	Python (Scikit-learn, PyTorch, TensorFlow), C#, C, SQL, Git, Bash, LaTeX
Data Science	Data Mining, Exploratory Data Analysis, Data Wrangling, Data Cleaning, Feature Engineering
Machine Learning	Supervised & Unsupervised Learning, Model Selection, Transformers, CNNs
Data Analysis	Power BI, Tableau, Pandas, NumPy, Seaborn, Matplotlib, MS Office (Excel, Word, PowerPoint), Jupyter
Business Intelligence	Dashboards, KPI Reporting, Data-Driven Decision Making
Cloud & Data Engineering	Hadoop, Docker, CI/CD, Distributed Systems, ETL Pipelines
Full-Stack Development	.NET (ASP.NET), HTML, CSS, Bootstrap, JavaScript, ReactJS, Streamlit, REST APIs, Flask, FastAPI

Education

M.Sc. **in Data Science**, *University of Potsdam | Completed coursework at TU Dortmund (Oct, 2020-Sept, 2023)* *Oct, 2023-Present*

B.Sc. **in Computer Science & Engineering**, *Ahsanullah University of Science & Technology* *Apr, 2013- Jun, 2017*

Applied Research & Technical Publications:

Physics-Guided Deep Learning for Heat Pump Stress Detection: A Comprehensive Analysis on When2Heat Dataset **(*Accepted, IEEE International Conference on Decision Aid Sciences and Applications (DASA)*, 2025)** | Real-Time Traffic Sign Detection for Autonomous Vehicles Using YOLOv11 **(*IEEE Xplore*, 2025)** | Statistical and Machine Learning Analysis of Maternal Smoking's Impact on Birth Weight **(*IEEE Xplore*, 2024)** | Hotel Booking Cancellation Prediction Using Applied Bayesian Models **(*IEEE Xplore*, 2024)** | Face-mask detection system using YOLOv5 to prevent COVID-19 spread **(*Computing Online*, 2022)** | Characterization & recognition of handwritten digits in Julia **(*Arxiv*, 2021)** | Bangla language textual image description by Hybrid Neural network model **(*IAES*, 2020)** | Diabetes mellitus prediction using ensemble ML approaches **(*IEEE Xplore*, 2020)** | Hybrid deep Neural Network for Bangla automated image Descriptor **(*IJAIN*, 2020)** | Cluster-based hybrid framework for network Intrusion detection **(*IJCA*, 2017)**

Projects

High-Performance Fake News Detection Model
- Developed a **fake news detection model** using **BERT**, achieving a **95% F1-score** on real-world datasets.
- Fine-tuned **Hugging Face Transformers** for improved accuracy, reducing misinformation spread risks.

Sentiment Analysis with Attention Mechanisms
- Built an **NLP model** with **LSTMs** and **Attention**, improving sentiment classification accuracy to 92%.
- Integrated **Transformer-based architectures** for deeper context understanding in sentiment analysis tasks.

Comparative Analysis of YOLOv5 to YOLOv11 for Traffic Sign Detection
- Boosted traffic sign recognition by 15% using **YOLOv11** over **YOLOv5**, improving real-time detection.
- Applied **PyTorch** and **OpenCV** to optimize object detection, enhancing model efficiency in real-world settings.

Employee Attrition Analysis & Prediction Models
- Predicted employee attrition using **XGBoost**, enabling data-driven HR retention strategies and cost savings.
- Conducted in-depth study on employee turnover using statistical modeling & predictive analytics, improving HR decision-making.

Languages

English: Professional proficiency **German**: B2.1 progressing towards B2.2