

Mijanur Rahman

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Work Experience

- 06/2023–Ongoing **Student Research Assistant, Fraunhofer IIS, Nürnberg, Germany**
- Employ GANs for generating synthetic time-series data to address data scarcity and class imbalance.
 - Assess the influence of loss functions and network architectures on GAN performance.
 - Evaluate various evaluation techniques to measure GAN performance.
 - Compare the proposed GAN with traditional data augmentation and state-of-the-art GAN techniques.
- 12/2022–05/2023 **Student Research Assistant (Thesis), Fraunhofer IIS, Nürnberg, Germany**
- Proposed the AcRCGAN model for generating synthetic time-series data, introducing a novel approach for time-series data generation.
 - Executed data preprocessing and established baseline classification accuracies utilizing two deep learning models on pertinent time-series datasets, ensuring robust benchmarking.
 - Carried out a rigorous performance evaluation of AcRCGAN compared to other state-of-the-art GANs, assessing its effectiveness and superiority.
- 05/2021–05/2023 **Student Research Assistant, Fraunhofer IIS, SCS, Nürnberg, Germany**
- Proficiently conducted data wrangling on raw datasets provided by clients, ensuring data was organized and ready for analysis.
 - Transformed complex data into actionable insights using data visualization techniques.
 - Implemented demand forecasting models to boost profitability through demand prediction and optimized inventory management.
 - Conducted comprehensive literature reviews to remain informed about the latest advancements and best practices in demand forecasting.

Education

- 10/2019–05/2023 **M.Sc. in Computational Engineering,**
Friedrich-Alexander-Universität, Erlangen, Germany
- 05/2012–12/2016 **B.Sc. in Petroleum and Mining Engineering,**
Chittagong University of Engineering and Technology, Chittagong, Bangladesh

Skills

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|---------------------------------|-------------------------|------------------------|----------------------------------|
| General Skills | ○ Machine Learning (ML) | ○ Data Visualization | ○ Data Structures and Algorithms |
| | ○ Deep Learning (DL) | ○ Data Wrangling | ○ Agile Methodologies |
| | ○ Data Science | ○ Statistical Analysis | ○ Time-series Analysis |
| Languages and Frameworks | ○ Python | ○ NumPy | ○ Scikit-Learn |
| | ○ PyTorch | ○ Pandas | ○ Optuna |
| | ○ TensorFlow | ○ Matplotlib | ○ FastAPI |
| | ○ Keras | ○ Plotly | ○ C++ |

Big Data and Databases

- PySpark
- SQL (PostgreSQL)

MLOps and Cloud Computing

- Docker
- Git
- GitLab
- GitHub
- MLFlow
- CI/CD pipelines
- AWS
- Google Colab
- Streamlit

Soft Skills

- Collaboration
- Problem Solving
- Continuous Learning
- Innovation
- Communication
- Adaptability

Others

- Microsoft PowerBI
- Microsoft Excel
- Linux (CLI)
- Windows (WSL)
- MacOS
- Confluence

Projects and Seminars

- 06/2021–09/2021 **"Project title: Synthetic terrain generation with generative adversarial networks (GANs): height map to texture map translation using pix2pix GAN."**
- Highlighted the pivotal role of virtual terrains in gaming, flight simulations, and related domains.
 - Applied pix2pixGAN for height-map to texture-map translation and assessed its performance in terrain rendering tasks.
- 12/2021–03/2022 **Seminar on: "Intraoperative Imaging and Machine Learning"**
- Illustrated the crucial role of the Böhler angle in facilitating rapid decision-making in orthopedic surgery.
 - Utilized deep learning techniques to determine the Böhler angle in Elbow X-rays, advancing diagnostic capabilities.

Honours and Awards

- 01/2023 **The Tensor Tournament T3 (Machine Learning (ML) Competition, *Machine Learning and Data Analytics Lab, Friedrich-Alexander-Universität, Erlangen, Germany***
- Solved diverse ML challenges encompassing classification, regression, and computer vision tasks.
 - Secured third place out of twenty-seven competing teams.

Languages

English C1 - Professional working fluency

German B1 - Intermediate

Hobbies and Interests

- Hobbies**
- Exploring nature through hiking, cycling, and soaking up the great outdoors.
 - Playing chess. It helps me focus.
 - Playing football and badminton on the weekends.
 - Cooking traditional cuisine.
- Interests**
- Reading blogs focusing on the latest tech trends in artificial intelligence.
 - Exploring literature, particularly drawn to fiction genres.
 - Watching movies with a penchant for films from diverse countries and cultures.