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mijanr
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Mijanur Rahman

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
Key Courses: Pattern Recognition, Deep Learning, Pattern Analysis, Computer Vision, Machine Learning for Time Series, Artificial Intelligence II, Optimization for Engineers, Programming in C++

05/2012–12/2016 **B.Sc. in Petroleum and Mining Engineering**,
Chittagong University of Engineering and Technology, Chittagong, Bangladesh

Skills

General Skills Machine Learning, Deep Learning, Data Science, Data Visualization, Data Wrangling, Statistical Analysis, Data Structures and Algorithms, Agile Methodologies

Languages and Frameworks Python, C++, PyTorch, TensorFlow, Keras, NumPy, Pandas, Matplotlib, Plotly, Optuna, Scikit-Learn, FastAPI, Huggingface, OpenCV, Hydra

Big Data and Databases PySpark, SQL (PostgreSQL)

MLOps and Cloud Computing Docker, Git, GitHub, GitLab, MLFlow, CI/CD pipelines, AWS, Google Colab, Streamlit

Others Microsoft PowerBI, Microsoft Excel, LaTeX, Jupyter Notebook, 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.