Muhammad Usama Sharaf

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Machine Learning Engineer

Education

- **Institute of Electrical Electronics and Computer Engineering** — University of the Punjab
  Electrical Engineering; CGPA: 3.64 — *Nov 2016 - Nov 2020*
  FYP: *Image based technique for channel estimation in Massive MIMO using Cyclic Generative Adversarial Network (CyclicGAN)*

Skills Summary

- **Languages**: Python, MATLAB, C++
- **Frameworks**: Scikit, NLTK, SpaCy, TensorFlow, Keras, Paddle, Pandas ,OpenCv,Pytorch
- **Tools**: ML flow ,Tableau , PowerBi , MATLAB , FastApi , aws
- **Interests**: GANs/VAE/,YOLO/RCNN/FRCNN, VGG/Inception/ResNet,Bert/GPT/FastAI ,LSTM/GRU/RNN
- **Soft Skills**: Presentation Skills,Leadership, Project Management, Research
- **Hard skills**: Predictive Modeling, Clustering/Classification/Regression/Object Detection,DNN Network Design,Transfer Learning/Fine Tuning

Experience

- **ZONG - CMPak** — Lahore
  Data Scientist (Full-time) — *Dec 2021 - Present*
  - **Use cases**: Identification and development of commercial and technical use cases including targeting marketing, capex vs apex utilization , MBB analysis , Revenue enhancement , Business intelligence. user behavior analysis, Clustering and churn prediction.
  - **Predictive Models - BSS**: Designed and deployed various predictive models using machine learning techniques particularly time series modeling using LSTM/RNN/GRU to increase Network performance Service quality , user experience, and revenue for business support system
  - **Auto ML - OSS**: Designed machine learning systems and self-running artificial intelligence (AI) to automate predictive models by data mining from identified resources.
  - **Decision support system DSS**: Deploy various ML/DL models to support Apex and Cap-ex related decision in region. Furthermore deployed anomaly detection algorithms for the identification of theft cases in fuel and Electricity using K-mean , hierarchical and Deep clustering network (DCN)
  - **Pipeline creation :**: Created , Coded and optimize ML/DL based predictive models and low-latency, high throughput data processing pipelines.
  - **Optimization:**: Optimization of real-time models by identifying opportunity of use of transfer-learning and fine-tuning.
- **NAVTTC** — Lahore
  Instructor Artificial Intelligence(Machine Learning/Deep Learning) — *April 2021 - Dec 2022*
  - **Research and Development**: Conducted lectures, practical classes, demonstrations, workshops and motivation sessions.
  - **Project supervision**: Supervised more then ten projects with academic and industrial coordination in domain of computer vision and Natural Language processing.
  - **Course content**: Delivered state of the art lectures from beginning to advanced level artificial intelligence topics including advanced python , Data-analytic (Pandas , Tableau , NumPy , matplotlib) , Machine Learning algorithm and implementations using sklearn and development of use cases. Advanced computer vision through OpenCV and TensorFlow scientifically in domain of object detection using YOLO/RCNN/FastRCNN , Time series analysis using modern algorithm including LSTM , RNN and GRU. Natural Language processing and attention , transformers. Data generation through generative adversarial networks and reinforcement learning.
- **Freelancing and consultancy** — Dubai/Pakistan/Remote
  Worked with software houses and multinational companies (Part Time) — *Jan 2021 - Present*
  - **Gitex - Dubai 2022**: Presented BreatheIO's product at Gitex Dubai event reaching 150000 developers and investors.
  - **Uniliver-Device Tech**: Developed a smart marketing and advertisement solution for point of sale. Presented in Ignite Pakistan 2022.
  - **Inxol Technologies**: Provide analysis ,insights, performance forecasting and developed dashboards on Tableau for monitoring of real time customers solor equipment performance based on various KPI including yield production, CO2 emission minimization and power generation
  - **Vieon-Jazz**: Facial Recognition system for monitoring of employees performance and attention KPIs
- **ML Research Assistant** — Lahore
  Radar & Remote Sensing Lab, Punjab University (Full Time) — *Dec 2020 - March 2021*
  - **Research**: Conduct research on machine learning algorithms, models, and techniques particularly for signal processing.
  - **Model Evaluation and Optimization**: Evaluate the performance of machine learning models using various metrics and statistical methods.
  - **Data Acquisition** : Collect, preprocess, and analyze large datasets using statistical and machine learning techniques.
  - **Model training**: Collaborate with other team members to design and implement machine learning solutions for signal processing.

Projects

- **Vison - A cyclic GANs based approach for error reduction in signals processing**: Research oriented, R& D , University of Cape Town, South Africa. Tech: Python, TensorFlow (October '21)
- **NLP - Auto customer complaint segregation for early rectification and time reduction** : AI based NLP model to resolve large number of complain data , effectively bringing down processing time exponentially.) Tech: Python, NLP (Feb '2022)
- **Data Analysis & Visualization - Created predictive models and data science methods to estimate Network performance in Blackouts** : Effective for decision making for on field staff.) Tech: Tableau, Python, NLP (Feb '2022)
- **Time series analysis : Designed and implemented Machine Learning models for 100plus associated datasets with millions of records, to ensure network productivity through KPI bench-marking and predictive analysis.**: Tech: Python , LSTM/GRU , Tableau (Jan '23)

Publications

- **Danish Arif Siddiqi, Dr. Simon Winberg, Amin Ullah, M. Usama Sharaf, M. Danish Asim and Mubeen Siddiqi "AI based COVID-19 Early Diagnosis and Growth Prognosis System for common citizens using Forecasting Deep Learning Models" submitted 2022.**:
- **Danish Arif Siddiqi, Dr. Simon Winberg, M. Usama Sharaf, "Hyper-real image face generation from sketch using multistage cyclic generative network" submitted 2022.**:

Certification and Training's

- Microsoft Azure Artifical Intelligence 900
- Huawei BigData Analytic
- KNIME Data analytic
- PIAIC - Artificial Intelligence

Honors and Awards

- Network Leadership and excellent team performance Zong-2023
- Award of Appreciation University of the Punjab - June, 2020

Volunteer Experience

- **IEEE Punjab University** — Lahore, Pakistan
  Conducted online technical & soft-skills training and seminars impacting over 3000 students. — *2016 - 2020*
- **Event Organizer at Faiz Festival** — Lahore, Pakistan
  Organized events, conducted workshops and events reaching over 7000 people. — *Feb 2018*