Tayyibah Khanam

+1 (347) 556-6371 {New York, United States}

Email : tk2981@nyu.edu
Linkedin, Github
Personal Website

Education

- **New York University. Center for Data Science** — New York, NY
  Master of Science in Data Science — *Sep'22- May'24*
  Courses: Optimization & Computational Linear Algebra, Probability & Statistics for Data science, Introduction to Data Science
- **Aligarh Muslim University** — Aligarh, India
  Bachelor of Technology in Electrical Engineering; GPA: 9.07/10.0 — *Aug'18 - May 22*

Skills Summary

- **Languages**: Python, SQL, C, MATLAB
- **Tools**: Git, IBM SPSS, LaTex, Google Colab, Microsoft Azure, Jupyter Notebook, VSCode, Proteus, Simulink, macOS, Windows
- **Libraries**: Tensorflow, Keras, Pytorch, Scipy, Scikit-Learn, Matplotlib, OpenCV, Seaborn, Numpy, Pandas

Experiences

- **NYU Langone Health, New York University** — New York, NY
  Research Assistant @Fenyo lab, Supervisor - Prof David Fenyo — *Sept 22 - Present*
  - **Detecting Neutrophils**: Using Deep Learning Methods to Identify Neutrophil Infiltration in Histology Images to Helping Pathologists Diagnose Infection After Hip and Knee Transplant Surgery.
- **Algo University, Robotics Research Institute IIIT Hyderabad** — Remote
  Startup: Computer vision Intern — *Jan - July'22*
  - **Research**: Studied pose graph optimization, real-time molecular scene understanding (E-Net, U-Net) & depth prediction, with respect to the problem of bird's eye view multi-object SLAM for self-driving cars.
- **New York University, Center for Data Science** — Remote
  Summer Research Intern, Supervisor - Dr Elena Sizikova — *June - Dec'21*
  - **Visual ML**: Investigated interpretable ML algorithms, with a focus on special techniques for Visual Interpretability using GradCAM, NMF, GBP, etc. Further, evaluated and compared these methods using AOPC curves & BAM metrics.
  - **Medical Imaging**: Researched and reproduced results of popular reconstruction based methods (GANs & AEs) for anomaly detection in medical imaging.
- **Jawaharlal Nehru Medical College, Aligarh Muslim University** — Aligarh
  Summer Intern, Supervisor - Dr Ali Jafar Abedi — *June - Oct'21*
  - **Research**: Utilized, and compared results of numerous ML algorithms for feature learning and prediction of malnutrition in Indian under-five children on the Demographic Health Surveys dataset.
  - **Model development**: Introduced a novel anthropometric index **Stunted-Wasting** for prediction based on literature evidence along with the standard independent Stunting and Wasting indices. Further, achieved an Accuracy range from 74% up til **96%** and an AUC-ROC score range from 82% up til **99%** on the novel index.
- **Centre of Advanced Research in Electrified Transportation, AMU** — Aligarh
  Summer Research Intern, Supervisors - Prof Saad Alam — *June - Sept'20*
  - **Research**: Investigated the causes responsible for less popularity of EVs on road in Lesser Developed Countries through literature surveys. Further, performed a case study to analyze and gain insights on user charging behavior, electricity demand, and the effect of COVID-19 pandemic on both given a city's charging pile network.
  - **Optimization**: Developed a regression-based framework with a time-minimization approach that could optimize the EV Charging network of Mumbai by **18-26%**.

Publications

T.Khanam *et al.* "Efficient Machine Learning for Malnutrition Prediction Among Under-Five Children in India". Link

D.Mishra, **T.Khanam** and I.Kaushik. "Experimentally proven Bilateral Blur for Optimal Convergence". Link

T.Khanam *et al.*"Optimizing Electric Vehicle Charging With Charging Data Analytics". Link

T.Khanam *et al.* Big Data Applications in Smart & Sustainable Energy Systems: Review & Case Study. Link

Selected Project(s)

- **Fire Mapping using Satellite imagery (EY Data Science Challenge)**: Data centric approach to map fire regions on linescan datasets that involved extensive data pre-processing, clustering and masking on highly imbalanced GeoDataFrame datasets, aerial linescans and satellite imagery from NASA. Employed a custom made deep U-Net architecture built on dice coefficient loss for the binary segmentation task. Achieved an accuracy of **74%** & qualified to finals with a **world rank = 20**. (May'21)

Awards & Leadership

- Selected in top 25 (out of 330) applicants of university for the Sir Syed Global Scholar Award for financial assistance and mentorship.
- Selected among top 35 applicants (out of 1200+) for the Led By Fellowship program 2021 for experiential leadership training.
- Merit based INSPIRE scholarship offered to top 1% students by the Govt. of India.
- Served as the Coordinator of IEEE SIGHT AMU for 2 consecutive years, and the lead of SIGHT Data Science research group.