Yamin Adnan

Computer Science & Engineering Undergraduate

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Education

BRAC University **2021-2025**
Bachelor of Science in Computer Science & Engineering | CGPA: 3.63

Cantonment English School and College, Chittagong
HSC | Science | GPA 5.00 | Passing Year: 2020
SSC | Science | GPA 5.00 | Passing Year: 2018

Experience

Junior Executive, Administrative and Creative department, Football Club Of BRAC University **March 2022 – August 2022**

- In this role, I was responsible for designing creative social media posts for the club's social media handle and handling various administrative activities during events.

Assistant Secretary, Performance department, BRAC University Cultural Club **October 2023 – May 2024**

- In this role, I was responsible for performing during different events of the cultural club and have performed during different plugged and unplugged shows.

Recent Projects

Gumbel-Softmax Feature Selection Networks for high-dimensional medical image analysis

- Gumbel-Softmax based discrete feature selection inside 3D CNN pipelines to identify informative voxels and perform classification on high-dimensional MRI data.
- *Tech Stack: PyTorch, NumPy, Pandas, NiLabel, Scikit-learn, Matplotlib, TorchIO*

Resonance

- One-stop music platform to shop/rent instruments, book studios/pads, hire session musicians, and collaborate with others.
- *Tech Stack: MERN (MongoDB, Express, React, Node.js)*

BrickByte

- A real estate project where users can look for properties to buy/rent through advanced search as well as sell/rent their properties by uploading their listings.
- *Tech Stack: MERN (MongoDB, Express, React, Node.js)*

Ongoing Research Project

Optimizing the Early Detection of Dementia by Tracking the Progression of Parkinson's Disease Using Deep Learning and Computer Vision

- **Cohort Selection:** Define PD patients (with/without cognitive impairment) and healthy controls from PPMI dataset; select subjects with 3-4 years longitudinal visits.
- **Pipeline:** Phase 1 & 2 (Complete): PD detection using 3D Inception V3 on baseline MRI then Cognitive impairment prediction with MRI + clinical features. Phase 3 (Current): Trajectory prediction, time-to-dementia estimation and change point detection.
- **Modeling:** Extract spatial features from multi-timepoint MRI, model disease progression trajectories, predict time-to-dementia onset, and detect critical change points in PD progression patterns.
- **Evaluation:** Assess with AUC (target 0.80-0.85), Accuracy, F1, MAE for time prediction; apply Grad-CAM for spatial explainability and SHAP for feature importance.

Technical Skills

- **Languages:** Python, C/C++, Assembly
- **Database:** MongoDB, MySQL
- **Python Libraries:** NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn
- **Frameworks:** Tensorflow, Pytorch, MERN Stack
- **Design Tools:** Figma
- **Office skill:** Sheets, Word, PowerPoint
- **Version Control:** Git, GitHub

Certification & Courses

- Cleaning Data in Python - DataCamp
- Feature Engineering for Machine Learning in Python - DataCamp