

# Syed Yousuf

## Software Engineer and Aspiring Data Scientist

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## Education

### Sir Syed University of Engineering and Technology | (BSc) Software Engineering

2017 – 2020

Built a Deep Learning model to assist Doctors in diagnosing disease. **Image dataset.** Malaria cells, pneumonia and brain tumor. **Tabular dataset.** Diabetes, heart disease, kidney disease and breast cancer. Model predictions are saved to a database for further medical analysis. Used Dash and Flask to create a simple to use web application.

### National College | Pre-Engineering

2014 - 2016

### St. Patrick's High School | Computer Science

2004 – 2014

## Certification

Coursera Python and Statistics for Financial Analysis. Completed July 2020

<https://www.coursera.org/account/accomplishments/verify/KMBHZ3MUQ96U>.

## Skills

- Coding and libraries: Python, NumPy, Pandas, Scrapy
- Machine Learning: Scikit-Learn, TensorFlow, Keras
- Data visualization: Matplotlib, Seaborn, Plotly
- Web applications: Dash, Flask
- Database: MySQL

## Data Science Projects

- Freelance work for a client. Built a CNN (Convolutional Neural Network) for a binary prediction. The model was predicting real face images vs face made by generative adversarial network the project was of a student test accuracy was 75 percentage.
- Freelance work for a client. Built a multipage Dashboard using Dash Plotly and for data processing Pandas framework was used.
- Built a CNN model on various image datasets including face expression, pneumonia, malaria. Productionalized the model as a web application.
- Freelance project that required accessing data from online sources. Built a web scraper to automate the data extraction using Python ScraPy.
- Performed sentiment text classification using a RNN (Recurrent Neural Network) on various public datasets. Productionalized the model as a web application.

## Data Science Experiments

I have primarily used Kaggle datasets to hone my data analytical skills. This was supplemented by freelance client work conducted during term holiday.

**EDA (Exploratory Data Analysis).** Performed EDA on a wide range of datasets including: Coronavirus, hotel booking, sales, diamond, and heart disease. Use Matplotlib, Seaborn and Plotly for data visualization. Created an interactive dashboard in Tableau:  
[https://public.tableau.com/profile/syed.yousuf5438#!/vizhome/TitanicBook\\_16014606357110/TitanicStory](https://public.tableau.com/profile/syed.yousuf5438#!/vizhome/TitanicBook_16014606357110/TitanicStory).

**Neural Networks.** Used CNN, LSTM, and Autoencoder models. Used GPU cloud services like Google Colab.

**Time series.** Aware of temporal train-test split of time-series data to avoid data leakage. Experimented with Neural Network LSTM architecture models.

**Natural Language Processing.** Improved model by removing stop words and punctuation.

**Imbalanced data.** Worked with imbalance data sets and applied resampling using the SMOTE library.

**Machine Learning algorithms.** Very familiar with classification and regression problems. Used K-Means to cluster unlabeled data for a customer segmentation problem.

**Hyper parameter tuning.** Used grid search on smaller data sets and random search on large data sets.

**Machine Learning pipelines.** Taken advantage of scikit-learn pipeline library to automate data preprocessing, model selection, k-fold cross-validation and hyper parameter tuning.