UJJWAL

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PROJECTS

Twitter Sentiment Analysis & Stock price prediction Aug 2021 - Dec 2021

- Aggregated 5 years tweets, obtained sentiment values using **VADER** & **TextBlob**, and established significance of correlation between stock values and twitter sentiment values via **Spearman Correlation** Coefficient.
- Built a State of Art multivariate time-series forecasting model using **LSTM architecture**, to anticipate next day's stock price based on previous day's stock price together with twitter sentiment values. **Improved prediction error by 25%**. Link

American Sign Language (ASL) Image Classification Aug 2021 - Dec 2021

- Classified 87000 images into 29 ASL classes applying Convolutional Neural Networks (CNNs); Compared model performances by varying kernel sizes, activation functions (**ReLU, Swish & Mish**) and implementing image augmentation.
- Achieved best accuracy of **97.23%** and **82.44%** in non-augmented and augmented image datasets respectively. Link

Analysis of Droughts and their Intensities in California Feb 2021 - May 2021

- Analyzed 21 years of meteorological indicators data and drought severity data of California state. Utilized 18 meteorological features to predict droughts and classify intensity in 5 severity classes based on Palmer Drought Severity Index (PDSI) scale.
- Predicted drought presence with **85% accuracy using RandomForests** coupled with **VotingEnsemble** (soft), classified it with **73% accuracy** employing **OneVsRestClassifier**. Link

UDACITY: Machine Learning Engineer with Microsoft Azure Jul 2020 - Jan 2021

- Built & optimized Azure ML pipeline using **Python SDK**; employed Azure **AutoML** Classification on Bank-Marketing Dataset and deployed best model **(VotingEnsemble, 91.75% accuracy)** through **Azure Container Instance (ACI)**. Link1 | Link2
- Capstone Project: Performed machine learning classification task on Heart Failure Clinical Data using **Hyperdrive** and **AutoML**; Deployed best model **(VotingEnsemble, 91.96% AUC weighted)** as an ACI and tested through **JSON request**. Link

Business Analytics Capstone Mar 2020 - Apr 2020

- Devised plan of action to provide key insights and analysis for adblocking problem; defined 5 crucial aspects of problem statement and proposed adoption of **exploratory, descriptive,** and **causal research** to formulate strategy.
- Devised strategy including **adaptive approach** and **shaping approach**, determined anticipated effects on 3 key factors, described ways to measure effects and reported key drivers for the recommended solution. Link

TECHNICAL SKILLS

Languages: Python, SQL, MATLAB, C, C++, HTML
Libraries: Keras, NLTK, Scikit-learn, PySpark, Pandas, Numpy, Scipy, Plotly, Matplotlib, Bokeh, Seaborn, Statsmodels, XGBoost
Tools: Microsoft Azure (ML), Tableau, Streamlit, PowerBI, MS Office, MS SQL Server Management Studio
Data Science: Data Modelling, Data Visualization, Statistical Modeling, Machine Learning, EDA, NLP, Deep Learning, MLOps

CERTIFICATES

UDACITY: *Machine Learning Engineer with Microsoft Azure,* DATACAMP: *Data Scientist with Python,*
COURSERA: *Machine Learning by Stanford University, Business Analytics Specialization by University of Pennsylvania*

EDUCATION

University Of Maryland, Baltimore County (UMBC), Maryland Expected: Dec 2022
Master of Professional Studies, Data Science GPA: **3.95/4.00**
(Intro. Data Science, Data Management, Ethical & Legal Issues in Data Science, Platforms for Big Data Processing, Intro. Data Analysis & Machine Learning, Intro. Natural Language Processing, Artificial Intelligence, Capstone Project)

Punjab Engineering College (PEC), Chandigarh, India May 2018
Bachelor of Technology, Mechanical Engineering GPA: **7.19/10.00**

WORK EXPERIENCE

Graduate Grader, *Data Science Department, University of Maryland, Baltimore County* Jan 2022 - Present

- Assist Professors in developing course materials and conduct study sessions to aid students with course contents.

UMBC Global Ambassador, *Center for Global Engagement, University of Maryland, Baltimore County* May 2021 - Present

- Facilitate academic & social integration of incoming international students to UMBC culture; Provide support at webinars, hosted events, and International Student Orientation (**100+** attendees).

Mechanical Design Engineer, *Center for Research and Innovation, Havells India Ltd., India* Jun 2018 - Jun 2019

- Developed mechanical design, engineering drawings of pump components as per GD&T; CAD modeled **150** pump components used across **20 SKUs**, collaborated with cross-functional teams **(30+ personnel)** for prototyping & production.

Visiting Researcher, *Advanced Vehicle Engineering Center, Cranfield University, U.K.* Feb 2017 - Jul 2017

- Researched on HIL (Hardware In Loop) test rig for thermal management system of Electric Vehicles (EVs).

PATENTS/PUBLICATIONS

"Pump Set Motor Assembly for Preventing Contaminant Ingress", Indian Patent 201911005525, Aug 14, 2020