RAJARSHI CHATTOPADHYAY

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PROJECTS

2019

Twitter Sentiments

Academic

University of Texas at Dallas

- A Spark Streaming application for live tweets sentiment analysis.

Tech/Skills: *Scala, SBT, Spark, Twitter API, Zookeeper, Kafka, ElasticSearch, Logstash, Kibana*

Repo: *github.com/likarajo/twitter_sentiments*

Link: *likarajo.github.io/twitter_sentiments*

2019

House Price Prediction

Academic

University of Texas at Dallas

- Analyzing house price data from Kaggle and building a model using the data which can be used to predict the final price of a house.

Tech/Skills: *Python, Feature-engineering, AWS S3 EC2 EMR, Spark, Scala, Regression*

Repo: *github.com/likarajo/house_price*

Link: *likarajo.github.io/house_price*

2019

Face recognition

Personal

- Image recording, preparing image data, and training with pre-built Haar-cascade classifier to recognize face.

Tech/Skills: *numpy, cv2, python, Haar-cascade classifier*

Repo: *github.com/likarajo/face_recognition*

Link: *likarajo.github.io/face_recognition*

2019

Chatbot

Personal

- A chat bot designed to simulate conversation with users base on Artificial Intelligence.

Tech/Skills: *AI, AIML, Python, Flask*

Repo: *github.com/likarajo/chatbot*

Link: *N/A*

2020

Sentiment of Movie Review

Personal

- Deep Learning model built with NN, CNN, RNN using pretrained GloVe word embeddings from Stanford Core NLP

Tech/Skills: *Python3, NLP, Neural Networks, Keras, tensorflow, Scikit-learn*

Repo: *github.com/likarajo/movie_sentiment*

Link: *N/A*

2019

Customer Churn

Personal

- Classification model to predict whether or not the customer is likely to leave the bank based on various customer characteristics using PyTorch

Tech/Skills: *PyTorch, classification, python3*

Repo: *github.com/likarajo/customer_churn*

Link: *N/A*

2019

Passengers Count

Personal

- Time Series Prediction to predict the count of traveling passengers based on historical data using Long Short Term Memory (LSTM) Neural Network

Tech/Skills: *LSTM, Neural-Network, Time-Series-Prediction, python3, jupyter-notebook*

Repo: *github.com/likarajo/passengers_count*

Link: *N/A*

2019

Car Evaluation

Personal

- Deep learning classification model to evaluate a car using Tensorflow2.0

Tech/Skills: *TensorFlow2.0, classification, deep-learning, neural-network, python3, jupyter-notebook*

Repo: *github.com/likarajo/car_evaluation*

Link: *N/A*

2019

Petrol Consumption

Personal

- Deep learning regression model to predict petrol consumption using Tensorflow2.0

Tech/Skills: *TensorFlow2.0, regression, deep-learning, neural-network, python3, jupyter-notebook*

Repo: *github.com/likarajo/petrol_consumption*

Link: *N/A*

2019

Language Translation

Personal

- Deep Learning language translation model built with Keras using LSTM Neural Machine Translation with seq2seq encoder-decoder architecture

Tech/Skills: *Keras, deep-learning, LSTM, neural-machine-translation*

Repo: *github.com/likarajo/language_translation*

Link: *N/A*

2019

Text Generation

Personal

- Deep Learning model to predict the next word based on a sequence of input words built with Keras using LSTM Neural Network

Tech/Skills: *Keras, deep-learning, LSTM, neural-network*

Repo: *github.com/likarajo/comment_toxicity*

Link: *N/A*

2019

Comment Toxicity

Personal

- Multi-label classification model to predict the probability of each type of toxicity for comments using deep learning with Keras.

Tech/Skills: *Keras, deep-learning, neural-network, classification*

Repo: *github.com/likarajo/text_generation*

Link: *N/A*

2019

Business reviews

Personal

- Multi-Input classification model to classify user reviews regarding different businesses using deep-learning with Keras

Tech/Skills: *Keras, deep-learning, neural-network, classification*

Repo: *github.com/likarajo/business_reviews*

Link: *N/A*

2017

Kinship

Personal

• A tool that finds out what are the related words (kins) to a particular word that twitter users have tweeted.

Tech/Skills: *Python3, Twitter API, TKinter*

Repo: *github.com/likarajo/kinship*

Link: *likarajo.github.io/kinship*

2019

Personal Website V3

Personal

• Version 3 of my portfolio website.

Tech/Skills: *JS, Gatsby, Netlify, GitHub-Pages*

Repo: *github.com/likarajo/website*

Link: *likarajo.github.io*

2019

Movie Search

Academic

University of Texas at Dallas

• Movies Search based on self-implemented TF-IDF values and Cosine-Similarity computed using movie plot summaries data taken from CMU Movie Summary Corpus.

Tech/Skills: *Spark, Scala, TF-IDF, Cosine-Similarity*

Repo: *github.com/likarajo/MovieSearch*

Link: *N/A*

2019

Airport Rank

Academic

University of Texas at Dallas

• Rank top airports based on self-implemented Page Rank values computed using their connections data from Bureau of Transportation Statistics.

Tech/Skills: *Spark, Scala, Page rank*

Repo: *github.com/likarajo/AirportRank*

Link: *N/A*

2019

News Topic Modelling

Academic

University of Texas at Dallas

• Find out topic of news from CNN news data

Tech/Skills: *Spark, Scala, Latent-Dirichlet-Allocation*

Repo: *github.com/likarajo/topics*

Link: *N/A*

2019

Text to Number

Personal

Project

- Implementation of Text Vectorization methods - Bag-of-words, TF-IDF, Ngrams

Tech/Skills: *Python3, Scikit-learn, nltk, Bag-of-words, TF-IDF, Ngrams*

Repo: *github.com/likarajo/text2number*

Link: *N/A*

2019

Social Network Analysis

Academic

University of Texas at Dallas

- Analysing a social network of users liking each other's posts created in a graph structure.

Tech/Skills: *Spark, Scala, GraphX*

Repo: *github.com/likarajo/social_network*

Link: *N/A*

2019

Crimes Analysis

Academic

University of Texas at Dallas

- Finding the crimes cluster in a region using Kmeans clustering as silhouette.

Tech/Skills: *Spark, Scala, Kmeans-clustering*

Repo: *github.com/likarajo/crimes*

Link: *N/A*

2019

Car Analysis

Academic

University of Texas at Dallas

- Classify cars as automatic or manual.
- Predict mileage of cars.

Tech/Skills: *Spark, Scala, Support-Vector-Classifier, Decision-Tree, Logistic-regression, Linear-Regression*

Repo: *github.com/likarajo/car_analysis*

Link: *N/A*

2019

Sentiment on US Airline

Academic

University of Texas at Dallas

- Analyzing sentiment on US Airlines with Logistic Regression, Random Forest classifier, Naive-Bayes classifier using tweets data on US Airline.

Tech/Skills: *Scala, Spark, Classification*

Repo: *github.com/likarajo/usairline_sentiment*

Link: *N/A*

2019

Sentiment of a sentence

Academic

University of Texas at Dallas

- Used dataset of labelled sentences from Yelp, Amazon, IMDB to learn a model and use the same to analyze the sentiment of new sentences.

Tech/Skills: *Scala, TF-IDF, Classification*

Repo: *github.com/likarajo/sentence_sentiment*

Link: *N/A*

2019

Earthquakes

Personal

- Fetch data from USGS and plot areas across the world that had a 4.5+ earthquake in the last 24 hours.

Tech/Skills: *Python, Basemap, Conda*

Repo: *github.com/likarajo/earthquakes*

Link: *N/A*

2019

Temperature Anomaly

Personal

- Fetch data from NASA and plot regions on map that are fire hazards with high temperature anomaly.

Tech/Skills: *Python, Basemap, Conda*

Repo: *github.com/likarajo/hightemp*

Link: *N/A*

2019

Recommender System

Academic

University of Texas at Dallas

- A recommender systems built using Collaborative filtering on ratings data.
- Used Alternating least squares (ALS) algorithm to learn the latent factors.

Tech/Skills: *Scala, Spark, Collaborative-Filtering, Alternating-Least-Squares-Algorithm, Latent-factors*

Repo: *github.com/likarajo/recommender*

Link: *N/A*

2019

Dimensionality Reduction

Academic

University of Texas at Dallas

- Built a Support Vector Machine (SVM) Classifier model with Stochastic Gradient Decent (SGD) for Principal Component Analysis and Spectral Clustering.

Tech/Skills: *Python3, SVM-Classifier, Principal-Component-Analysis, Spectral-Clustering*

Repo: *github.com/likarajo/dimensionality_reduction*

Link: *N/A*

2019

Ensemble Methods

Academic

University of Texas at Dallas

- Self-implementation of Bagging and Boosting on Decision Tree ID3 algorithm.
- Comparing it with Scikit Learn implementation using Mushroom Data Set.

Tech/Skills: *Python3, Decision-Tree, ID3, Bagging, Boosting, Scikit-Learn*

Repo: *github.com/likarajo/decision_tree_ensemble*

Link: *N/A*

2019

Decison Tree ID3

Academic

University of Texas at Dallas

- Self-implementation of Decision Tree ID3 algorithm.
- Comparing it with Scikit Learn implementation using MONK's Problems and Tic-Tac-Toe Endgame Data Set.

Tech/Skills: *Python3, Decision-Tree, ID3, Scikit-Learn*

Repo: *github.com/likarajo/decision_tree*

Link: *N/A*

2019

Breast Cancer Diagnosis

Academic

University of Texas at Dallas

- Model built for diagnosing and predicting Breast Cancer with Support Vector Machine using Wisconsin Breast Cancer diagnostic data set.

Tech/Skills: *Python, Scikit-Learn, Support-Vector-Classifier*

Repo: *github.com/likarajo/breastcancer_diagnosis*

Link: *N/A*

2019

Titanic Survival

Personal

- Titanic survival prediction with Decision Tree classifier using dataset from Kaggle Competetion.

Tech/Skills: *Spark, Scala, Decision-Tree-Classifier*

Repo: *github.com/likarajo/titanic_survival*

Link: *N/A*

2019

Tetris Game

Academic

University of Texas at Dallas

- A tetris UI game built as part of Computer Graphics curriculum.

Tech/Skills: *Java, AWT, Swing*

Repo: *github.com/likarajo/tetris*

Link: *N/A*

2018

CICD

Personal

• Continuous Integration and continuous deployment using Jenkins.

Tech/Skills: *Jenkins, DevOps*

Repo: *github.com/likarajo/devops-helloworld*

Link: *likarajo.github.io/devops-helloworld*

2018

911Calls

Personal

• Data Science and visualization on 911 calls data.

Tech/Skills: *Python3*

Repo: *github.com/likarajo/ds911calls*

Link: *N/A*

2015

MQ Reporting Tools

Professional

IBM

• Developed a Java UI for daily queue status report generation for the core application on a single click eliminating manual effort.

Tech/Skills: *Java, SWT, Unix, Bash*

Repo: *github.com/likarajo/mqreporting*

Link: *N/A*

2015

MQ Statistics Tools

Professional

IBM

• Automated daily queue status monitoring and reporting for the core application eliminating manual effort.

Tech/Skills: *Unix, Bash*

Repo: *github.com/likarajo/mqstats*

Link: *N/A*

2017

Rock Paper Scissor game

Personal

• A One-player rock paper scissor game built using Python

Tech/Skills: *Python3, TKinter*

Repo: *github.com/likarajo/rock-paper-scissor*

Link: *likarajo.github.io/rock-paper-scissor*

2018

Dallas Care

Academic

• Relational database designed for a hospital

Tech/Skills: *N/A*

Repo: *github.com/likarajo/DallasCare*

Link: *N/A*

2017

Clock

Personal

• An online clock that can be customized; can be reused in any web page.

Tech/Skills: *HTML, CSS, JS*

Repo: *github.com/likarajo/clock*

Link: *likarajo.github.io/clock*

2016

Brick Breaker Game

Personal

• A One-player brick breaker game built using Javascript

Tech/Skills: *HTML, CSS, JS*

Repo: *github.com/likarajo/brickbreaker*

Link: *likarajo.github.io/brickbreaker*

WRITINGS

2018

Containerization

Personal

• A beginners guide for Creating and Publishing Docker Image for a Python app.

Tech/Skills: *Containerization, Docker*

Repo: *N/A*

Link: *likarajoblogs.wordpress.com/2018/10/02/creating-and-publishing-docker-image-for-a-python-app*

2018

CICD

Personal

• A guide to learn the use of Jenkins for Continuous Integration and Continuous Deployment of projects.

Tech/Skills: *Containerization, Docker, Jenkins, DevOps*

Repo: *N/A*

Link: *likarajoblogs.wordpress.com/2018/12/29/devops-continuous-integration-and-continuous-deployment*

2018

Python UI Game

Personal

- A guide to build and containerize a GUI application

Tech/Skills: *Containerization, Docker, Jenkins, Python3, Tkinter*

Repo: *N/A*

Link: *linkedin.com/pulse/basics-python-tkinter-rajarshi-chattopadhyay*

2019

Summer 2019 Internship Experience

Professional

Copart Inc

- An article based on my learning outcomes and experience during my Summer internship at Copart

Tech/Skills: *N/A*

Repo: *N/A*

Link: *linkedin.com/pulse/software-engineer-internship-experience-summer-2019-chattopadhyay*

2014

RISC Processor using Harvard Architecture

Academic

West Bengal University of Technology

- Based on my Bachelor's Thesis: Overview of designing and developing a Reduced Instruction Set Computing microprocessor, using Harvard Architecture.

Tech/Skills: *RISC, Harvard-Architecture, Microprocessor, Assembly-language*

Repo: *N/A*

Link: *likarajoblogs.wordpress.com/2018/06/08/risc-using-harvard*

2019

Functional and Object Oriented Programming

Personal

- An article based on my learning outcomes from attending and informational session on Functional Programming.

Tech/Skills: *Fucntional-Programming, OOP*

Repo: *N/A*

Link: *linkedin.com/pulse/functional-vs-object-oriented-programming-rajarshi-chattopadhyay*

2018

Big Data in Agriculture

Personal

- My thoughts on use of big data in agriculture in the modern modern world.

Tech/Skills: *N/A*

Repo: *N/A*

Link: *likarajoblogs.wordpress.com/2018/06/04/bigdatainagriculture*