Kranthi Giramoni

Machine Learning Engineer

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Synopsis: Around 4+ years of experience in IT, with 3+ years of experience creating ML/NLP models and retraining systems and transforming data science prototypes to production-grade solutions. Building predictive (Supervised & unsupervised models) and NLP models (Sentiment analysis and topic modelling). Consistently employs statistical methods and designs to yield real gains from model changes.

Skills

- Programming: Python, PostgreSQL, MongoDB, .Net (Asp.net)
- Analytical Tools: SPSS, Tableau, Power BI, Weka, Qlik Sense, Google Analytics
- Machine Learning: Regression, Classification, Clustering, PCA
- Deep Learning: CNN, RNN(LSTM), Keras, Open CV
- Natural Language Processing: Text Classification, Topic Modelling, Distributed Word representation (word2vec/GloVe), Transfer Learning
- ML Libraries: Pandas, NumPy, Sk-Learn, SciPy, NLTK, BeautifulSoup, Request, lxml, Selenium, Matplotlib, Stats models
- DL Libraries: TensorFlow, PyTorch, VGG16&19, Activation Functions, Pooling, Transfer Learning, Loss Function, Optimizer, Image Data Generator, Dropout layer, Flatten Layer
- Statistical Analysis: Hypothesis Test, T-Test, Z-test, Chi-Square, ANOVA, Correlations tests
- Evaluation Techniques: Cross-validation, Confusion Matrix (Accuracy, Precision, Recall, F1-score, FPR, ROC & AOC), Hyperparameter tuning
- Application Framework: Flask, Spring MVC, Hibernate Application
- Application & Web Servers: Apache2.4, Tomcat, Nginx, uWSGI
- Web Scraping Tools: ParseHub, Scrapy, Mozenda
- Tools : Jira,Kafka, LabelImg, Agile, Github, AzureMl Studio, BalasmiqCloud

Work History

Aug 2020 - Current

Machine Learning Engineer

Sowra Info Solutions Pvt. Ltd, Hyderabad, Telangana

Project Details: **High Density Farming** (Identifying the Diseases on crops in the earlier stage using the IoT devices) **-** Rise Hydroponics (Ahmedabad)
Technologies: Python3 and Deep Learning, Flask, and Opencv
Database: MongoDB
Description: HDF(High Density Farming) is identifying the diseases on crops in the earlier stage using the IoT devices.
Used the TensorFlow object detection API to detect the diseases on Tomato leaves such as Bacteria Spot, Leaf miner, Septoria Spot and Mealblight.
Pre-processed the images using the Opencv library such techniques called GaussianBlur, image threshold, cv2.erode(), cv2.dilate(), watershed and bitwise maping.
Trained the model using SSDlite_mobilent_v2 coco Pre-trained model.
Deployed the model on mobile device using TFLite framework. This mobile is attached to IoT device where the IoT device makes the continue monitoring on Tomato plants in the green house.
Once the disease is detected on plants it logs the information of the plant. This data saves in the SqlLite database it runs the batch every day and the logged information will send to the end user using the mailing services.
Roles & Responsibilities:

- Verified the collected images data for before it gets annotate.
- Guided the team to using the LabelImg tool for annotation purpose.
- Performed the image preprocessing such as image resize and cv2.Threshold(), cv2.erode(), cv2.dilation(), cv2.watershed(), cv2.bitwise() operations.
- Developed the python script to change the xml annotated xml coordinates using ETree library.
- Performed the image data splitting for train, test and validation. Used Pandas and Matplotlib APIs.
- Performed the augmentation techniques on the images such as Rotate, Flip, brightness and etc using cv2.
- Used the SSDlite_Mobilenet_V2 coco dataset Pre-trained model
- Installed the GPU with the mother board port and making the GPU setup such as RoCm installation.
- Trained the model on GPU (AMD Radeon VII)
- Deployed the model on mobile device using TFLite framework
- Developed Rest Web-Services for Email notifications using mailing service API
- Deployed the model in AWS EC2 environment and making the predictions for Images
- Based on the predictions, providing the suggestions for disease preventions
- Implemented the community functionality

Nov 2019 - Jul 2020

Machine Learning Engineer

Sowra Info Solutions Pvt. Ltd, Hyderabad, Telangana

Project Details : **Voice of Customers** (Text Classification & Topic Segregation) - Air Canada,Delta
Technologies: Python, NLTK, Scipy, Gensim(LDA), Word cloud, Neural Networks(RNN(BILSTM)), Keras, Flask, Docker
Description: Building a generalized model for the detection of the emotion and segregates of text given by consumers (Users) on mobile application and retrieve negative comments which intern helpful for testes to improve application scalability and usability and application robust.
Roles & Responsibilities:

- Extraction of Data(textual Reviews) for model building from Customer application
- Applying pre-processing steps with text data which interns produce a clean text which would be useful for model building
- Transforming Consumed text data into features for providing input to model with useful techniques (example= Count Vector, tfidf, tokenize)
- Building sentiment and Topic model choosing an appropriate algorithm (Model) based on multiple Hyper-parameters finalize model based on metrics assumed. Either compromise in any of type 1 or type 2 errors based on the use case.

Dec 2018 - Aug 2019

Data Analyst

Sowra Info Solutions Pvt. Ltd, Hyderabad, Telangana

Project Details: **Hospitality Management**
(Tourism and Travel Analysis, Sentiment Analysis/Recommendation system, Forecasting) - Mayfair Hotels & Resorts
Technologies: Python, SQL, Data Normalization, Feature Selection, Data Exploration, NLTK, Scipy, Gensim(LDA), Word cloud, Corpus, Tokenization, Vectorization(Bag of Words),Stemming & Lemmatization, Sentiment Analysis, Recommendation system, Seasonal decompose,Rolling Statistics, ADCF, ARIMA(AR & MA),Flask, Docker
Description: The purpose of this project is mainly to focus on how to track booking variables (such as Hazards Location, Date-Time, Priority, Duration, Social media network) and identifying the traffic towards Hotels based on Historical Data.
The aim is to increase revenue and best services to the customers, identify the influencing factors of consumer behavior, finally build the suitable model influencing the track booking behavior.
Roles and Responsibilities:

- Extracting data from Web Scraping, and (PMS & POS) SQL databases.
- Performing Preprocessing, Normalization and Exploratory data analysis (*EDA*) techniques.
- Conducted Cohort Analysis to understand the origin of the track booking and designed a predictive model.

- Implemented predictive and Estimation Machine Learning Algorithms including Logistic Regression, Naive Bayes, Decision Tree and SVM.
- Transforming Consumed text data into features for providing input to model with useful techniques (example= Count Vector, tfidf, tokenize)
- Performing NLP, Visualizing , Word cloud techniques on Text data.
- Building Sentiment and Recommendation model choosing an appropriate algorithm (Model) based on multiple Hyper-parameters finalize model based on metrics assumed.
- Performing Seasonal decompose model Test to identify trends and relationships between different pieces of data.
- Performing Rolling Statistics and ADCF (Argument Dickey-Fuller) Test for Testing the Stationarity of a Time Series.
- Performing Hypothesis techniques to Test Statistics, P-value, Critical values.
- Data Transformation to Achieve Stationarity through Logscale, Square root, Expodecy.
- Implementing ARIMA (AR& MA) or ACF, PACF model for Hyperparameters(p,d,q).
- Build the model for Predicting the Confidential intervals and Forecasting Sales.

Dec 2017 - Dec 2018

Data Analyst

Sowra Info Solutions Pvt. Ltd, Hyderabad, Telangana

Project Details: **Customers Churn Analysis** - Singtel, Singapore
Technologies: Python, SQL, Excel, Scipy, Data Normalization, EDA, Feature Selection, Machine Learning (Logistic Regression, Random Forest, SVM, ADA Boost and XG Boost), Flask, Docker
Description: Client approach the company tries to Identify in advance customers who are likely to Churn. The company then targets those customers with special programs or incentives. This approach can bring in a huge loss for a company if churn predictions are inaccurate because then firms are wasting incentive money on customers who would have stayed anyway.
Roles and Responsibilities:

- Study and Deep Understanding of Variables and Data Sets.
- Performing Data cleaning, transformation, validation with the purpose of understanding or making conclusions from the data for decision-making purposes.
- Performing descriptive statistics, and visualization techniques to check the data normality.
- Performing Exploratory data analysis techniques based on client requirements.
- Implementing dummy variables technique for convert categorical variables.
- Performing Feature engineering techniques for identifying the important variables.
- Building models based on supervised (classification and regression) by doing multiple experiments taking Hyper-parameter tuning into consideration to achieve the best metrics.
- Performing cross-validation technique for model and choosing the right model for deployment and providing an executive summary.

Feb 2017 - Nov 2017

Data Analyst Trainee

Sowra Info Solutions Pvt. Ltd, Sowra Info Solutions Pvt. Ltd, Telangana

Project Details: **Forecast Sales** - Spectrum Mediacom, Hyderabad
Technologies: SPSS, SQL, and Excel
Description: Analyze the Historical Quarterly Sales Data and provide the best fit model to forecast the future sales. Find the best investment area to improve in the next 3 months
Roles & Responsibilities:

- Study and Deep Understanding of Variables and Data Sets.
- Performed Data cleaning, transformation, validation with the purpose of understanding or making conclusions from the data for decision-making purposes.
- Implementing descriptive statistics, and visualization techniques to check the data normality.
- Perform inferential techniques i.e. a test of Hypothesis, Chi-Square, ANOVA, T-Test, Correlations, Regression & Factorials using predictive data modeling techniques-Regression, Classification, using SPSS.
- Documented best-fit model results for each demographic data set for further business enhancements.

Education

Jun 2011 - Jun 2015

Bachelor of Engineering Technology: Electronics And Communication Engineering

Sree Dattha Institute Science And Engineering - Hyderabad

Certifications

- ASP.NET & SQL | August '16 – March '17
- Power BI & Tableau | Apr '20 – May '20
- Artificial Intelligence Bootcamp | December '20

Accomplishments

1. I'm with the team of 4 people were finalists for the TechGig competition sponsored by Global logic and insurity for the idea of building the image classification model using Neural Networks for issuing the insurance of the damaged vehicle.
2. I have participated in the Mutilabel classification (NLP) competition powered by TechGig.