Enfa George

Major: Computer Science
School: University Of Arizona
Graduation: May 2023
Senior Leader: Len Barlik
Hiring Manager: Taimoor Khawaja

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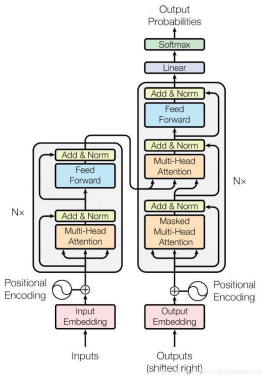
Senior Leader: Mark Greatrex

Hiring Manager: Taimoor Khawaja

1 Modeling - Intent Classification of Customer Chats

- ✔ Conducted initial Exploratory Data Analysis on Customer Support chat data to discover patterns, spot anomalies, test hypotheses, and check assumptions with the help of summary statistics and graphical representations.
- ✔ Constructed a custom set of words, using Tf-IDF and manual process, that, when removed from chat data, reduces noise in input data. This was shown to improve model performance downstream.
- ✔ Performed careful data class imbalance treatment using hybrid methods to improve the predictive performance of models downstream.
- ✔ Produced a solid, simple baseline using industry advice and personal experience by creating a model using Tf-Idf and straightforward neural network layers in scikit-learn.
- ✔ Trained and tested an LSTM model using the Keras framework to compare against the above baseline.
- ✔ Constructed as a third approach, a combination of pre-trained BERT embeddings from Hugging face and LSTM layers to create a new model later used in deployment in the Tensorflow framework.



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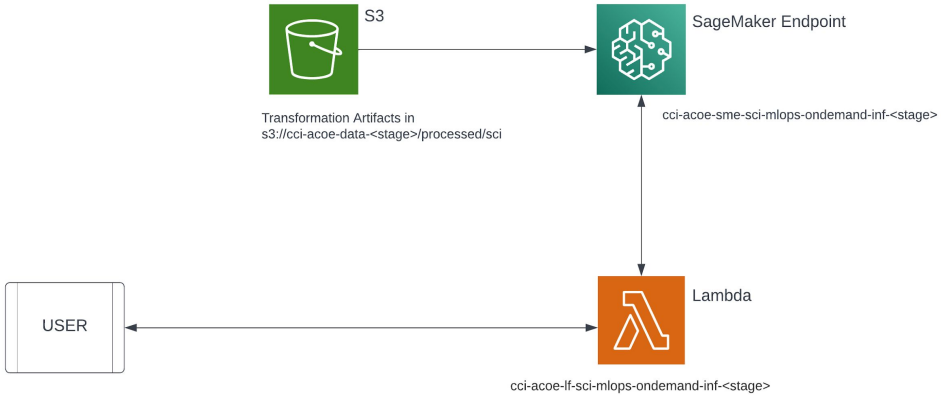
2 Deployment of a Live On Demand Inference Endpoint

- ✔ Surveyed various training and inference pipeline architectures deployed at large companies using blogs and conference videos.
- ✔ Presented the info in a summarized and pictorial manner to my manager.
- ✔ Analyzed inference pipeline deployment patterns supported by AWS and proposed a suitable one for a real-time inference that scales efficiently to large loads.
- ✔ Trained various simple NLP models in different frameworks (scikit-learn, Pytorch, and Tensorflow) and experimented with creating model and endpoint configurations for the same in AWS.
- ✔ Successfully trained a sentiment analysis model using BERT for embedding and Deep Learning.
- ✔ Deployed it as an on-demand live inference endpoint, triggered through AWS Lambda.
- ✔ Deployed a Chat Intent Detection Model as Live Inference Endpoint, with preprocessing, and post-processing as a step and using BERT for embedding and DL techniques in a secure data environment in DEV, which will be later used for a cross-team MLOps initiative.



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Software/Frameworks I got the Opportunity to Work with

aws

Jenkins

jupyter

TensorFlow

Hugging Face

scikit learn

PyTorch

COX