EE / CprE / SE 492 – Sddec18-16

Use machine learning to predict relevant support content based on historical user interactions.

Week 5 Report
October 8, 2018– October 22, 2018

Team members
Erin Elsbernd: Machine Learning Lead
Ram Luitel: Project Manager and Software Architect
Faizul Jasmi: Communication coordinator
Taizhong Huang: QA Lead
Christian Chiang: Cloud Tech Lead
Khoa Bui: Webmaster and DB lead

Summary of Progress for the Past Two Weeks.

During these past two weeks we worked on the new architecture that we will be implementing in AWS due to constraints found in the infrastructure, time limitations in lambdas are 5 minutes once started not including the cold start, reading back and forth csv files in s3 was not feasible as opening and closing the connection for thousand and thousand of file would take more than just 5 minutes. We decided to migrate all the data to DynamoDB tables for faster read/write speeds, this has been a challenge as some of the data sets are two large to make them an object. Machine learning models have been converted to straight python as well. We are also exploring more machine learning model with new data.

Pending Issues

The .csv reader (Lambda function) is parsing the data incorrectly. Resulting in incorrect table in DynamoDB. We need more data as well because we might just need more data points to have better accuracy (currently at 65%) for our model.

Plans for Upcoming Reporting Period

Integrate additional data from client into data processing and modelling processes. Fine tune models as needed given extra data. We would also integrate the scripts (data and model) into the AWS lambdas once all the data is transferred to the DynamoDB Tables.

Individual Contributions

Team Member	Contribution	Biweekly hours	Total hours
Erin Elsbernd	Integrate new data with data cleaning and processing process. Review new AWS workflow	3	15
Ram Luitel	Re-wrote models like artificial neural network and k-nearest neighbors to come up with better prediction. Also create and present second presentation.	4	16
Faizul Jasmi	Fixing the CSV reader using Lambda function to read, process, and store CSV files to DynamoDB	2	16
Taizhong Huang	Read other member's models, and converted one from .ipynb to .py. Combined my model with the converted model into one project.	5	16

Christian Chiang	Redesigned cloud architecture due to time and data size limitations in the AWS infrastructure	4	19
Khoa Bui	Work on team website and update team pag. Help the team member to prepare and present second presentation of the semester. Also explore with DynamoDB to convert .csv to Jason objects	3	13