Submission from Ilir Hajrullahu (7813401), Lily Djami (7478862), Numan Tok (6927093)

Project status by 09.03.2023

Spotify

After consultation with the Spotify group and a time complexity analysis of the two solution ideas (Clustering+Ann vs. Graph) the graph solution was chosen to be implemented. A graph model was implemented in python together with the fetching and preparation of the necessary data including API calls for tracks, user playlists and retrieving audio features which are the basis of the graph model. The model successfully returns the desired output and is in a state where it could be integrated.

Problems that occurred are 1. That it was no method found to get a large pool of tracks from which the model does the selection, 2. Slow runtime, 3. Missing idea how to validate the results, and no specification from the Spotify group on that (poor specification on what makes a good result).

For problem 1 Krystof was consulted for ideas (who is responsible for API things in his group). On problem 2 is currently being worked on. Problem 3 stays open for now.

Nutrition

A solution for object detection is chosen using the faster RCNN model. Initial tests were made using sample pictures from the Nutrition group. The results of the initial tests were good, some food items such as vegetables and fruits could be identified correctly, but there were difficulties identifying various bread and food in packaging (i.e. milk carton, cheese). To improve this result, the RCNN model was retrained on food databases (fruit and vegetable dataset, bread dataset, and supermarket item datasets). Sadly the retraining resulted in worse results, but this could be attributed to misaligned labels in training. Regardless, the original faster RCNN model was given to the Nutrition group so that it can start to be integrated into the frontend.

News Summary

Ilir has not been able to get back to the project lately, and there is no progress on the ML portion of the News Summary project. He has also not been in the ML meetings for quite some time, and we do not know if he will show up for the exam.

To-dos for project completion by 16.03.2023

Spotify

Numan is working on the runtime optimization and plans to finish it on March 8th. After that, the Spotify group will be consulted to talk about the integration of the model to their code and to discuss the other problems.

Nutrition

As the model has been given to the Nutrition group, Lily will further assist them in integrating the machine learning model into the frontend. Attempts at improvements and other troubleshooting of the model will still be done until March 11th, but the focus now is to make sure that the Nutrition group can have a somewhat functional prototype.