

Tri Minh Quach - EQWorkSample - Bonus

Assumptions. Imagine that in the winter in Canada, each city needs to report its temperature to a center at a specific timestamp. So one of the tasks is to determine which center to make the report, since it would be not reasonable if the temperature in Vancouver is reported to a center located somewhere in Nova Scotia, where is extremely far from Vancouver. So a reasonable hypothesis of POIs is that each POI plays as a center, and a request is the information of a city (name, lat, long). Such tasks can be trivial for humans. However, those tasks can be expensive since it is human-based and requires a real human to do it. So we need to build a model to make classification for us.

Problem statement. Given the name, latitude, longitude of a city, the model outputs a name of a POI accordingly to that input. Because the output is categorical type, our goal is to build a classification model.

Dataset. After step 2: *Label*, we can have a dataframe where each row is assigned to a specific POI. We can split this dataframe into training, validation and test set.

Model. Because the given dataset is a time-series one, we can apply Long Short Term Memory (LSTM) Recurrent Neural Networks model in Python with Keras to make the time-series classification.

Challenges. I had some problems in implementing that model so I have not finished it yet within a week.