

Travel Route Suggestion

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Abstract

- 1) To design a model that serve as a travel aid for tourists.
- 2) The proposed model will help the tourist in :
 - a) Recommending frequently visited places.
 - b) Informing the tourist beforehand regarding the difficulties associated with the route.
- 3) The recommendation system is based on the frequency of users visiting a location from source.
- 4) Difficulty score associated with a route is calculated using neural networks.
- 5) The backend of this system records the users feedback along with the source destination coordinates.

Problem statement

- 1) For a tourist taking a new journey from one point to next, the following question arises:
What all places to visit ?, What is the best way to reach a place ?
- 2) The first problem is answered by the recommendation system which informs the travellers with the nearby most frequently visited place on the basis of frequency analysis.
- 3) The second problem is answered by the text classification module powered by Artificial Neural Network which is subjected to supervised learning to identify easy routes from the difficult ones. The module then calculated the difficulty score and informs the travellers with the option of alternate route if the difficulty score is high.

Literature review

- 1) This section gives an overview about the papers related to our current scope of work
- 2) The papers are :
 - * Personalised and situation aware multimodal route recommendation :The favour Algorithm.
 - * Personalised travel recommendation by mining people attributes from community contributed photos.
 - * Personalised landmark recommendation based on geotags from photo sharing sites

Personalised and situation aware multimodal route recommendation :The favour algorithm

1. Favourite route Recommendation (FAVOUR) approach to provide personalized, situation-aware route proposals based on three steps:
 - * First, at the initialization stage, the user provides limited information (home location, work place) used to select one out of a small number of initial profiles.
 - * Second, based on this information, a stated preference survey is designed in order to sharpen the profile. In this step, a mass preference prior(MPP)is used to encode the prior knowledge on preferences from the class identified in step one.
 - * Third, subsequently, the profile is continuously updated during usage of the routing services.

Personalised travel recommendation by mining people attributes from community contributed photos

1. We propose a probabilistic personalized travel recommendation model.
2. Which adopts the automatically mined knowledges from the travel photo logs & the automatically detected people attributes in the photo contents.
3. They utilize 9 people attributes including:
 - * Two gender attributes(female,male).
 - * Four age attributes(kid,teen,middle-aged,elder).
 - * Three race attributes(cauassian,African,Asian).
- 4.) Whenever a new user wants to travel a specific destination, the model will recommends a place that have the most match.

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1. Advantage:

- * It can automatically detect person attributes like age, gender etc from photos.

2.) Disadvantage:

- * Identifying age, gender from photos might be difficult some times.
- * When it comes to group photos, the attributes will be failed.

Personalised landmark recommendation based on geotags from photo sharing sites

1. Geotagged photos of users on social media sites provide abundant location-based data, which can be exploited for various location-based services, such as travel recommendation.
2. This aims the personalized landmark recommendation based on users geotagged photos.
3. Advantages:
 - * When she, is traveling or plans to travel to a city for the first time. Deriving the traveler's preference from her activity at social media sharing websites for landmark recommendations requires no effort from the traveler.

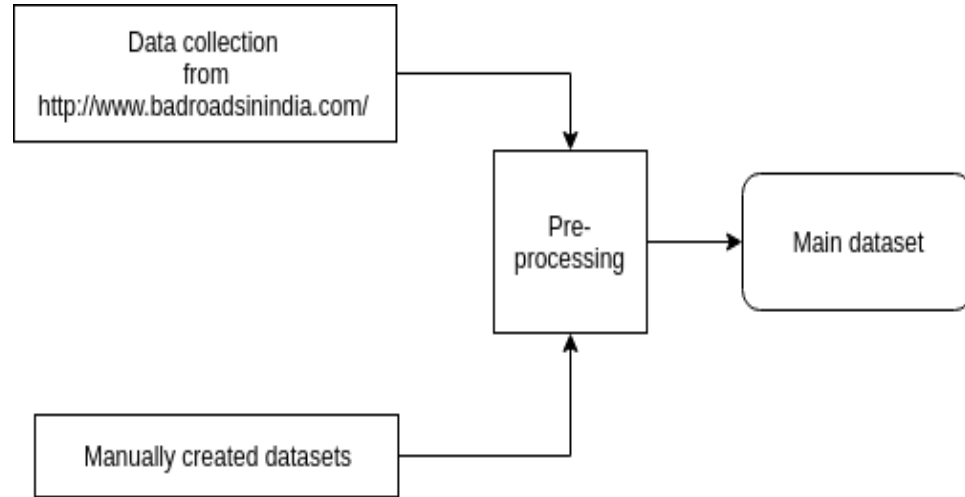
Contd..

- * Disadvantages:

- It only consider geotags for recommendation. It do not consider the feedbacks from early travellers.

Methodology- Data preparation

1. User review dataset is created as well as collected from the site www.badroadsindia.com
2. The dataset will be in form of sentence which is mapped to a class. The output class represents the difficulty score.
3. Eg- “The road was good and the climate was okay with less traffic” belongs to class 2

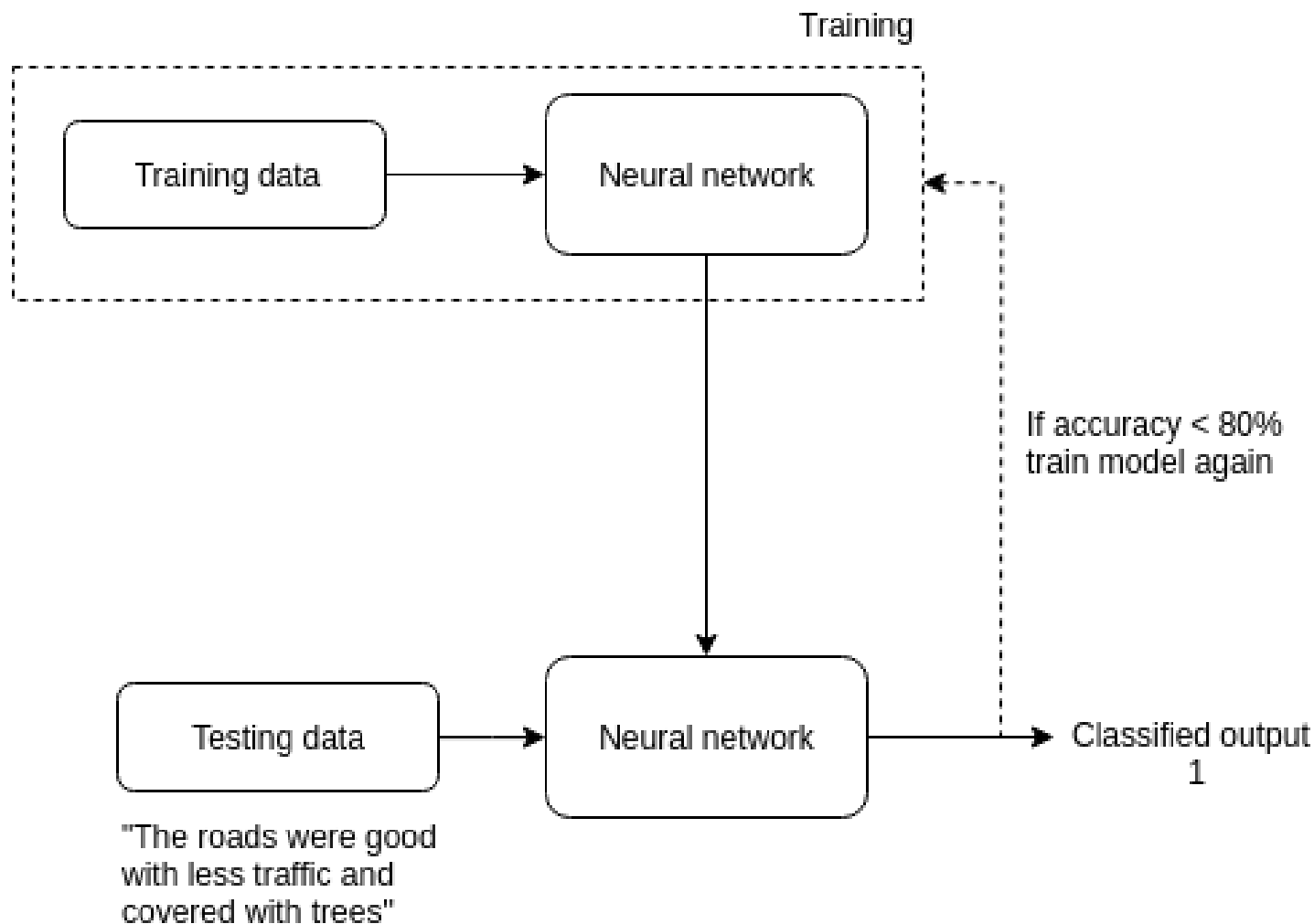


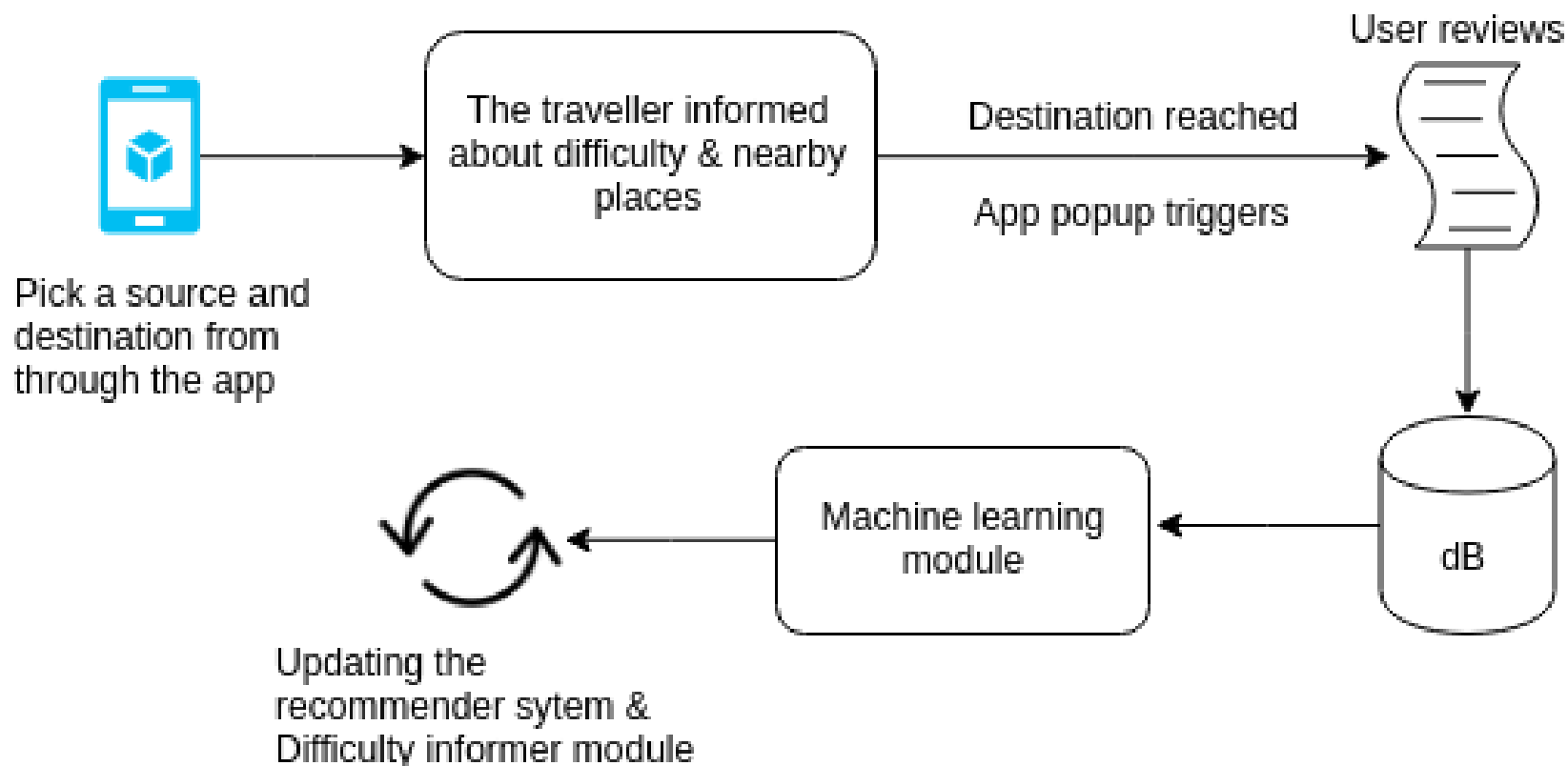
Methodology- Steps

1. After the data preparation is done, the data is splitted into training and testing data set in the ratio of 80:20.
2. For text classification Artificial Neural Network is used.
3. The training data will be converted into vectors by using TF-IDF (Term Frequency Inverse Document Frequency). The TF-IDF is used to evaluate how important the word is in a sentence. It converts the textual information into vectors which can be direct used for machine learning.
4. This data is fed into the neural network for training at each stage it gives the output loss which the difference between actual value & predict value(in our case class). The main aim of training is to reduce the loss to minimum and conversely to maximise accuracy.

Methodology- Steps

- 5.) After the training is finished the model is ready to be tested. The test data set is then passed to the neural net and the output obtained is checked for accuracy. The output will be essentially classifying the sentence into any of 5 classes from 1~5. Class 1 represent the travel route with least travel difficulty and vice-versa.
- 6.) Model with accuracy of 80% and above will be used for practical purposes. If the accuracy is not upto the mark, the design and hyperparameters(batch size, learning rate etc.) of neural network are changed to further train and improve the accuracy.
- 6.) This module along with the recommender will be integrated to the android app





References

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Thank you

