A prediction model of sharing-bikes

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Abstract: In this paper, we construct a model based on neural network to predict the destinations of sharing-bikes. Basically, the model is composed of two system, prediction system and evaluation system. Prediction system provides several predictions of destination based on some useful constructed features. Evaluation system is a neural network which will judge each prediction given by prediction system. Finally, the predictions with highest scores will be adopted.

Keywords: Keywords1; Keywords2;...

1 Introduction

In general, we can figure out several different methods to predict the destination, which is what prediction system will do in the model. Some important features are needed in these method. For instance, one can assume that a bike user will head for some 'crowded' place , so we need to define a criteria to measure how 'crowded' a place is. Also, one can assume that one will return where he start in his last ride. Different methods may lead to different results, and it's not easy to determine which method is the best for a certain record. So we are trying to teach our model to distinguish good predictions from bad predictions for each record. Here we use a simple neural network with only 1 hidden layer. When the training of neural network, which we called evaluation system in this model, is finished, we can use it to evaluate each prediction and select the one with highest score to be the best prediction we desired.

2 Data analysis and preprocess

The name of each column of raw data are as follows: $\text{order}_id, user_id, bike_id, bike_type, start_time, geohashed_start_location, ge$

3 Construction of features

4 Prediction methods

5 Training of model

6 Evaluation

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