

Time Prediction For Ambulance Booking System

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Abstract- Ambulance Booking is a blooming business that has the potentiality to generate huge revenue using Ambulance Booking System, instead of the traditional Ambulance hailing system. One can enhance the quality of service as well by streamlining and automating the processes by taking advantage of such technology. Our feature loaded and fast Ambulance Booking Application is enough efficient to handle the intricacies of the simultaneously running processes that ensures smooth growth of the business and reduce the downtime. As the internet users are increasing exponentially, companies have introduced Time Prediction for Ambulance Booking System. There are different ranges of Ambulances available according to one's preference. This system improves customer's experience but also eases the hassles of a customer while taking a ride. Ambulance Booking System has research driven features and functionalities that will lessen your effort, while it will improve the productivity, smoothen the booking procedure and enhance profitability of your company.

Keywords- time prediction, technology, ambulance

I. INTRODUCTION

You must have waited for ambulance in case of emergency or the weather conditions are bad or there is some unrest (religious, political, etc.) going on the roads. These are the very few problems faced by one while taking a ride. It's a time-consuming process which at times irritates customers. To resolve many such problems there is a Time Prediction for Ambulance Booking System introduced. The location of pick-up and destination predicts the estimated time of arrival, which makes the entire process very smooth and user-friendly ensuring the comfort of the customer.

II. LITERATURE SURVEY

The Ad-Din Hospital in 2008 put in place a cost-effective ambulance service that utilized mobile phones and geographical positioning system (GPS) tracking. It was established to assist women in Dhaka, Bangladesh to have prompt access to emergency obstetric care. It manages about 66 ambulances scattered throughout the city and an ambulance desk near Ad-Din Hospital entrance. For efficiency and quality of service, each ambulance in the Ad-Din network is equipped with a GPS tracking device to enable the dispatchers

to determine which driver can reach a given patient with greatest ease and speed. However, the challenge is the lack of integration between them. Moreover, people in need of emergency service still have to call and wait without knowing how far or how long it will take for the service providers to reach them. Based on these challenges, it is clear that an improved system is needed that has the capacity to provide visual proof of the nature the emergency situations to service providers for appropriate actions to be taken to save patients' lives.

III. TECHNOLOGY USED

1. PYTHON

Python is a widely used general-purpose, high level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation. It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently. There are two major Python versions- **Python 2 and Python 3**. Both are quite different. Machine learning is a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of Computer Programs that can change when exposed to new data. In this article, we'll see basics of Machine Learning, and implementation of a simple machine learning algorithm using python. Python community has developed many modules to help programmers implement machine learning.

2. Machine Learning

1. KNN Algorithm

It is used for both classification and regression. In both cases, the input consists of the k closest training examples in the feature space. The output depends on whether k -NN is used for classification or regression. In k -NN classification, the output is a class membership. An object is classified by a plurality vote of its neighbors, with the object being assigned to the class most common among its k nearest neighbors (k is a positive integer, typically small). If $k = 1$, then the object is simply assigned to the class of that single nearest neighbor.

In k-NN regression, the output is the property value for the object. This value is the average of the values of k nearest neighbors.

Distance Formula

To measure the distance between points A and B in a feature space, various distance functions have been used in the literature, in which the Euclidean distance function is the most widely used one. Let A and B are represented by feature vectors $A = (x_1, x_2, \dots, x_m)$ and $B = (y_1, y_2, \dots, y_m)$, where m is the dimensionality of the feature space.

To calculate the distance between A and B , the normalized Euclidean metric is generally used by

$$\text{Dist}(A,B) = \text{sqr}t(\frac{\sum(x_i-y_i)^2}{m})$$

2. TENSOR FLOW

TensorFlow is an end-to-end open source platform for machine learning. It has a comprehensive, flexible ecosystem of tools, libraries and community resources that lets researchers push the state-of-the-art in ML and developers easily build and deploy ML powered applications. Build and train ML models easily using intuitive high-level APIs like Keras with eager execution, which makes for immediate model iteration and easy debugging. Easily train and deploy models in the cloud, on-prem, in the browser, or on-device no matter what language you use. A simple and flexible architecture to take new ideas from concept to code, to state-of-the-art models, and to publication faster.

IV. METHODOLOGY

These are the main factors which is used to predict the time using Machine Learning:

Training Set

Training set is nothing but the Data used to train the algorithm. Typically, this comprises of parameters recorded from historical events.

Testing Set

A dataset containing records of the parameters, that is fed to the algorithm for predicting the travel time, is a testing set. The training set will consist of the four parameters along with the actual travel times

Temperature: General observation suggests that temperature also plays a part in influencing our travel plans.

Time of day / day of week: The time and the day of our travel do have an impact on our travel time.

Weather: As we all know, weather can have a significant impact on the traffic. Most of the times when the weather worsens, we tend to make alternate arrangements.

V. OBJECTIVES OF SYSTEM

Better Knowledge

This system will provide customer the time needed for the ambulance to arrive at the location. This confirmation will help customers to check all the details with the cost per km.

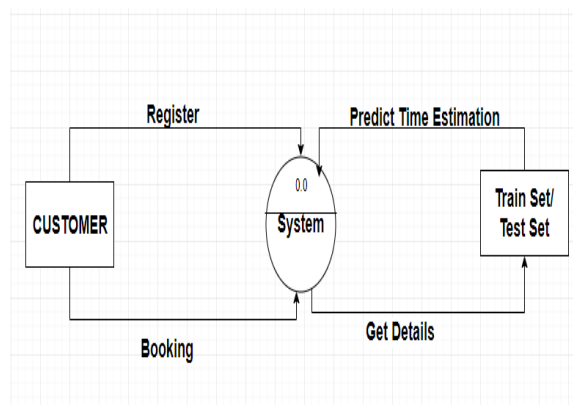
Improves Efficiency

This system will make things easier for drivers as whole booking process is done by customers only. These were the objectives of the Ambulance Booking System. Let us now get into the details of the working of this booking system.

VI. SCOPE OF SYSTEM

Whenever a customer visits the web application of the cab booking system, he/she will have to select his/her location so that the nearest cab available can take their booking.

VII. SYSTEM ARCHITECTURE



First customer has to sign in the system by using username and password. After that customer can login the system and then it can display the form where user can fill the information. Once user click the enter button then it store the

data in test set .Here training set and testing set compare the information and gives the predicted time.

IMPLEMENTATION:

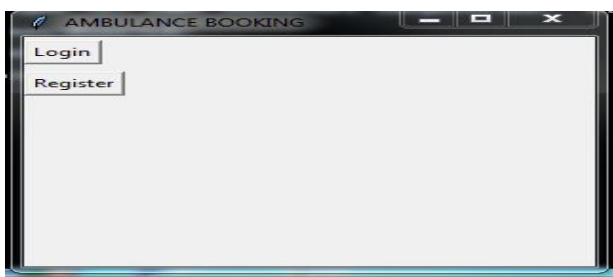
TRAIN SET:

No.	Zone	Day	CodedDay	CodedWe	Temperat	RealTime
1	0	114 Sunday	1	32	75	47
2	1	115 Monday	2	31	76	48.5
3	2	114 Tuesday	3	31	75	47.75
4	3	115 Wednesday	4	31	76	47.3
5	4	116 Thursday	5	28	76	49.8
6	5	115 Friday	6	29	75	48.9
7	6	115 Saturday	7	30	76	48.1

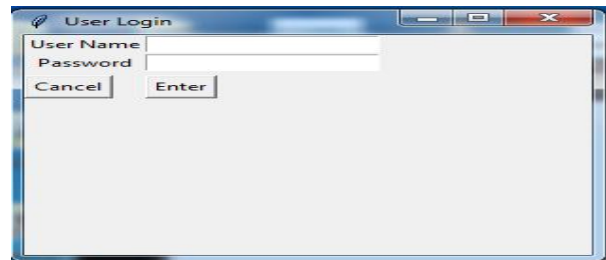
TEST SET:

No.	Zone	Day	CodedDay	CodedWe	Temperature
1	1	113 Monday	2	33	75

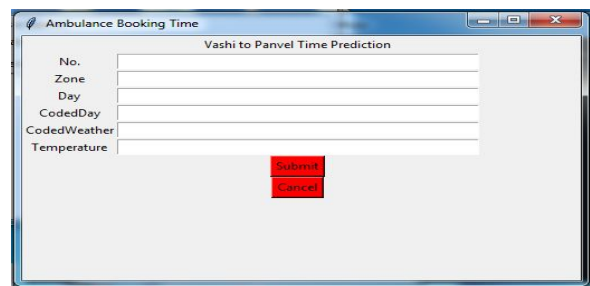
HOME PAGE:



LOGIN PAGE:



ENTER DETAILS FOR RIDE:



PREDICTED TIME:

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Instructions for updating:
Use 'tf.global_variables_initializer' instead.
Test 0, and the prediction Time is 48.5
C:\mp>
```

VIII. CONCLUSION

Much as the system may be costly to the financial institutions and the time to make an appointment may increase, safety of people should be considered a first priority. At the end we came to know that Time prediction proves to be a boon while booking an ambulance. User gets a quick idea of the ride.

IX. FUTURE SCOPE

To enhance the efficiency and to build a customer friendly application driver details and vehicle tracking using GPS can be introduced. This will increase convenience of the customer. Also, for further ease notification system via SMS can also be introduced.

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