A HOLISTIC APPROACH ON AIRFACE PRICE PREDICTION USING MACHINE LEARNING TECHNIQUES

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Abstract -

Our main idea about flight prediction is that we estimate the flight price by comparing today with another day . The main purpose of our system is to estimate flight prices by comparing today's flight prices with other dates, so that customers can book flight tickets according to their needs, comfort according to their affordability, that is, they can easily choose cheaper prices. Before going somewhere customers should know what the real price is for the same purpose and that there are different types of competition, if they don't know they will pay more than usual. This ticket price depends on many factors such as winter, festival, summer. and how many tickets are available for a particular flight. Flight tickets will be different during the day and at night. Prices can be estimated using this device using features such as arrival time, departure time and the time the ticket was purchased. Ticket prices may vary depending on these factors and are determined in conjunction with ticket changes. Using the above information to create a system that uses learning techniques such as random forest algorithms to predict the price based on the value of the ticket will help passengers decide whether to purchase a ticket or not. Today, airlines use complex strategies and strategies to distribute ticket prices dynamically. . It is difficult to bet on today's flight prices when we look at them compared to the previous day. Travelers who want to go to a new place should review the fares to get the cheapest fare that suits their needs. That's why we decided on this project. We will use machine learning as the backend in this project. Bottle as a python framework. initial phase. Flask is just one of the Python frameworks.

Keywords: UI, ML, Pkl, HTML, CSS, IDE, UML

1. Introduction

Flight price tags might be something worth betting on, we will see the prices now, tomorrow we will try the same flight price, it will be a special story. Flight ticket prices may sometimes rise or fall depending on variables such as flight time, destination, and flight length. Having basic information about flights before making travel arrangements can help many people save money and time. Since the deregulation of the airline industry, ticket pricing methods have evolved into a complex form of stateoftheart guides and mathematical models, leading to an emphasis on technology ticketing. Although largely secret, research shows that the rules are widely believed to be influenced by many factors. Variables always include distance, but although they play a large role, they are no longer the sole price decision. Factors related to marketing, advertising and social development play an increasing role in determining flight ticket prices. Today, airline groups use technology and strategies to share ticket prices. This process involves many financial, advertising, marketing and social considerations regarding the cost of starting a new airline. It can be difficult to bet on the price of the ticket at the sam

e time. We tested it today and compared it with the day before. Holidaymakers who want to go to a new place should be informed about the price so that they can get the most suitable price and the cheapest price for their needs. All this gave rise to the idea of predicting flight tickets to make it easier for tourists to book flight tickets according to their needs. As prices fluctuate due to excessive pricing practices of airline companies, it becomes difficult for customers to purchase the lowest ticket. For this purpose, fixed operation has been determined as a feature of normal flight, assuming that these operations will affect the ticket price. Technology can provide answers using machine learning techniques to increase uncertainty about future flight costs. We will use the Flight Price dataset provided by Kaggle Flight Price. The database contains 1063 documents in 13 columns that provide information about flights operated in India in 2019 with the help of some Indian and foreign companies. We will analyze this data using a machine learning strategy to predict terminal costs based on the features provided in the dataset. We will start a data research life to work with data. Recent advances in artificial intelligence (AI) and machine learning (ML) enable machine learning (ML) guidance inference, and multirole model changes in Airline fares can be found in normal business dealings. To the best of our knowledge, all existing charts use learning techniques to estimate the initial flight cost. We asked the authors.Follow some simple instructions. More importantly, we request that your article be similar to this article. The easiest way is to download the template and replace the content with your own (just take paper and paste it). he number used to link the product is enclosed in square brackets (for example [1]). However, the author also stated that the content can be changed, as well as many uses in the text. The order of information in the travel summary should correspond to the reference list at the end of the document.

1.1 Purpose and Objectives

Purpose: The aim of this project is to help people book tickets according to their needs by analyzing the costs of different flights for today and other days.
Goal: The overall goal of this project is to create a Web user interface that will estimate the price to be given to the customer based on the instructions given.

Goals:

™ Create the most accurate model using appropriate machine learning algorithms.

Save the final design.

Using HTML and CSS to create web pages

Using Flask project to display web pages

1.2 motivation

1) There are many flight booking applications such as The moment is convenient. Passengers do not know how wide the airline's price is if they want to travel from one place to another.

2) In order to save money and time, we will decide to create a system where users can book tickets as they wi

sh.

2. Literaturesurvey

Flight ticket price prediction is a difficult task because pricerelated factors change over time, causing the price to change. Over the past few years, researchers have combined machine learning algorithms and data mining techniques to obtain better model value. Among these, regression models such as linear regression (LR), support vector machine (SVM) and random forest (RF) are often used to estimate the initial cost of the aircraft. Early studies also evaluated the use of distribution models to predict travel. Ren et al. It is recommended to use LR,Naive Bayes, Softmax regression and SVM to create a prediction model and divide the value into five groups (60% - 80%, 80% - 100%, 100%). % to 120)%, etc.) Compare price to overall average price. The model uses more than nine thousand records containing six attributes (e.g., start of departure week, appointment date, station number, etc.).The authors report a learning error of approximately 22.9% using the LR model. SVM regression models did not perform satisfactorily. Instead, the SVM classification model is used to classify values as "above" or "below" the mean value.

Table -1: Sample Table format

SR.NO	Reference Name	Work Description	Problem Found	Any other criteria
1	IndiGo	IndiGo is one of the flight booking app which can predict the flight ticket as well as book the flight ticket.	This app predict ticket price for only of Indigo flights not for other flights.	Registration is required
2	Ixigo	Ixigo is one of the flight booking app which can predict the flight ticket as well as book that ticket	This app only predict some Popular airlines like SpiceJet, AirAsiaIndia, GoFIRST, Vistara, AirIndia, IndiGo	

Unlike existing and recent works, our framework plans to work on cost estimation using only public resources with very few features. Additionally, the framework can be used to estimate the cost of air tickets in any market, without being limited to a specific market, which often restricts current operations.

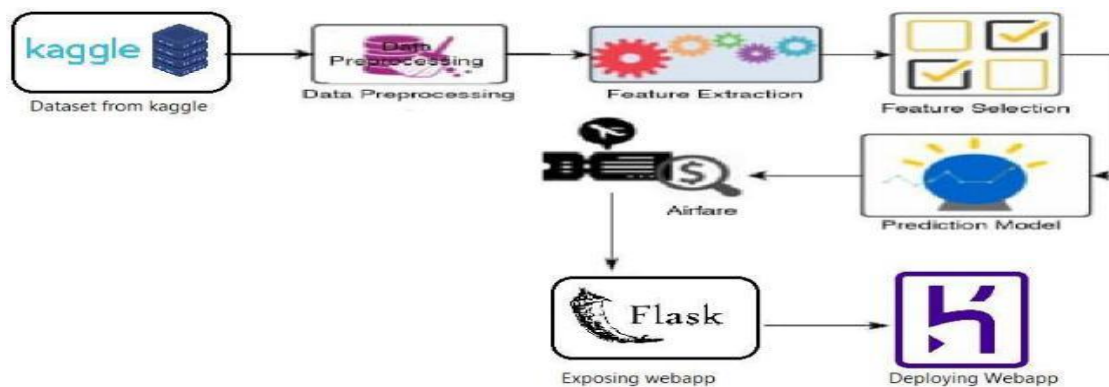## 3. SYSTEM ARCHITECTURE

Following is the system architecture:-

Chart -1: Architecture

4. ALGORITHM

Step1:DownloadingDatasetfromKaggle: :
Kaggle allows users to search and create data, explore and build models, collaborate with many researchers and resource managers, and participate in challenges to solve problems, mine data in a webbased data science environment.

Step 2: Data processing: The first step is to search for data. It is used to transform raw data into meaningful and useful data. Many features in the dataset contain the same data. Direct integration leads to more copy space. In addition, the information sent by airlines may contain human errors, foreign exchange, etc. Error results may occur due to various reasons. Therefore, by design, it is important to preprocess the data to create the correct input data for you to build your machine learning model.

Step Three: Feature Extraction: The purpose of feature extraction is to reduce the number of functions or features in the data by creating new functions from popular functions (and then discarding the specific function). Reducing these new jobs should be able to collect the highest stats available on certain jobs.

Step 4: Feature Selection: Feature selection is a system that reduces multiple input variables when making model predictions. It is best to reduce the number of variables to reduce the cost of the model and in some cases to improve the overall performance of the model.

Step 5: Predictive Model: The model algorithm we use is Random Forest. Random forest is a supervised machine learning algorithm. It is a collection of various decision trees whose results are compiled as the final result. According toThis article was published on the preliminary study of "Household Weather Forecast". We collected flight ticket data from the Kaggle website and the results showed that it is possible to predict flight price based on historical fare data. Experimental results show that the machine learning model is a satisfactory tool in predicting the initial cost of the aircraft. Another important factor in air ticket prediction is the collection of information and specific selection, from which we draw some conclusions. Through testing, we conclude which features have the biggest impact on ticket prices.

Recognition:

Completing any job requires collaboration. It includes all skills/nonskills from variouss sources. The involvement of experts in the form of expertise and other support is essential. We are grateful for Prof.'s encouraging advice. K.V. Our advisor is Patil.Also Prof. Dr. IN. Thank God for your valuable guidance.
We are happy to thank our teachers Dr.S. God. R. Patil. Last but not least, we would like to thank all the teachers and our class for their direct and indirect help in making this project a success.

References:

[1] Section âMoz Ali. "Deploy machine pipeline in the cloud using Docker", https://towardsdatascience.com/deploy-machine-learning-pipeline-on-cloud-usingdocker-container-bec64458dc01

[2] Book - Dr. Bachir Chihani and Rafael Benevides, docker CLI and Dockerfile Cheat Sheet.

[3] https://analyticsindiamag.com (22/07/2019). Why should you use Docker for machine learning? We use it to explain the situation

[4] https://www.analyticsvidhya.com/blog/2021/04/rapid

-fire-eda-process-using-python- - ml- use/. Rapid-Fire EDA framework using Python for ML application

[5] https://www.javatpoint.com/machine-learning-random-forest-algorithm Random Forest Algorithm

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