



“Survey Paper on Flight Ticket Price Prediction Using Machine Learning”

Prof. Kokare S.A¹, Kamble Priya², Thorat Komal³

Assistant Professor, Computer Department, SPCOET College, Baramati City, India¹

Student, Computer Department, SPCOET College Baramati City, India²

Student, Computer Department, SPCOET College Baramati City, India³

Abstract: Flight ticket price is the continuously changing data which varies every day. Depending on the various factors that affect it directly or indirectly. we cannot say that the price of flight ticket fare remains the same or not. It is quite a tough task to predict the flight ticket fare. It may change throughout the week, month or some days, but it can be predicted nearly accurate to the actual flight ticket price. We can say that today's flight ticket price which is different from tomorrow's flight ticket price to solve this problem we can predict accurate flight ticket price for various airlines with various cities.

Nowadays many of people not aware of buying flight ticket also many of people pay more amount for buying flight ticket. The flight ticket price are totally depends upon season like summer, winter and festival. So our system helps to predict flight ticket price before people buying flight ticket.

Keywords: Machine Learning, Random Forest Regressor, Jupyter, Pycharm, etc.

I. INTRODUCTION

Nowadays, the airline corporations are using complex algorithms for the flight ticket price calculations. This highly complicated methods makes the flight ticket price difficult to guess for the customers, since the price changes dynamically. It is difficult for airlines to maintain prices since price change dynamically due to different conditions. That's why we will try to use machine learning to solve this problem. This can help airline by predicting what prices they can maintain. It can also help customers to predict future flight prices and plan their journey accordingly.

- **Input features:-**

1. Airline -: It contains various types of airlines like Indigo, Jet airways, Air India and many more.
2. Date of journey -: In this column will let us know about the date on which the passengers journey will Start
3. Source -: Source holds the name of the place from where the passengers journey will start.
4. Destination -: The destination holds the name of the place to where passengers wanted to travel.
5. Route -: Here we can know about that what is the route through which passengers have opted to travel from his/her sources to their destination
6. Arrival Time -: Arrival time is when the passengers will reach his/her destination.
7. Duration -: The duration is the whole period that flight will take to complete its journey from source to destination.
8. Stops -: This will let us know in how many places flights will stop there for the flight in the whole journey.
9. Price -: Price of the flight for a complete journey including all the expenses before onboarding.

By inputting these features we get the estimated price.

II. LITERATURE SURVEY

1. Paper name: A Framework For Airfare Price Prediction: A Machine Learning Approach

Author: Tianyi Wang*, Samira Pouyanfar*, Haiman Tian*, Yudong Tao†, Miguel Alonso Jr.*, Steven Luis* and Shu-Ching Chen*

The proposed framework combine two databases, by using ML algorithm to model the quarterly average ticket price based on different origin and destination.



2.paper name: Airfare Price Prediction Using Machine Learning Algorithm

Author: Mohit Vyavhare, Komal Wable, Shreya Kute, Ashwini Taskar

In this paper, Social media data has been used for event prediction, traffic prediction then similar approach followed to extract the airline ticket price. This paper tells us about the overview of the feature selection algorithm which is going to search feature space to find optimal feature subset.

3.paper name: INDIAN FIGHT FARE PREDICTION: A PROPOSAL

Author: Jaywrat Singh, Champawat, Uddhav Arora, Dr.K.Vijaya

In this paper aim to find efficient model which predicts the price of ticket with better accuracy, with features that might have been hind-sighted in the previous models, solely on the Indian market.

4.paper name: Airfare Price Prediction System

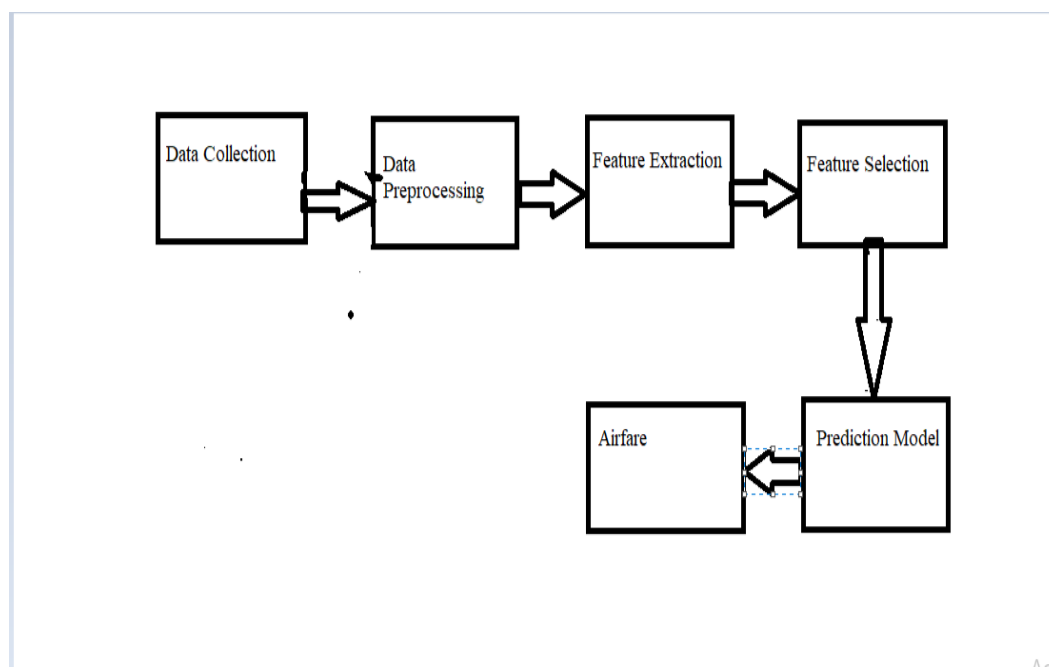
Author: Rutuja Konde, Rutuja Somvanshi, Pratiksha Khaire, Prachi Zende, Kamlesh Patil

In this paper we will go to use machine learning as backend, flask as a python framework, frontend. Flask is nothing but one of the python frameworks.

III. PROPOSED SYSTEM

In this proposed system we focus on to predict flight ticket price using machine learning algorithm like Random Forest. We might have often heard travellers say that flight ticket prices are so unpredictable.

We mainly work on the dataset and do some transformation like creating different columns, clean a noisy data so that it can be used in our machine learning model. This step is very important because for high prediction score you need to continuously make changes in it.



**IV.ALGORITHM****Random Forest:**

Random Forest is a popular machine learning algorithm that belong to the supervised learning technique. It can be used for both Classification and Regression problems in ML. It is based on the concept of ensemble learning, which is a process of combining multiple classifiers to solve a complex problem and to improve the performance of the model .As the name suggests, "Random Forest is a classifier that contains a number of decision trees on various subsets of the given dataset and takes the average to improve the predictive accuracy of that dataset." Instead of relying on one decision tree, the random forest takes the prediction from each tree and based on the majority votes of predictions, and it predicts the final output .Random forests or random decision forests is an ensemble learning method for classification, regression and other tasks that operates by constructing a multitude of decision trees at training time. For classification tasks, the output of the random forest is the class selected by most trees. For regression tasks, the mean or average prediction of the individual trees is returned.

V.CONCLUSION

The purpose of this project is to predict actual price of flight ticket before people buying a ticket.

REFERENCES

- [1] J. Stavins, "Price discrimination in the airline market: The effect of market concentration," *Review of Economics and Statistics*, vol. 83, no. 1, pp. 200–202, 2001
- [2] "B. Mantin and B. Koo, "Dynamic price dispersion in airline markets," *Transportation Research Part E: Logistics and Transportation Review*, vol. 45, no. 6, pp. 1020–1029, 2009.
- [3] "P. Malighetti, S. Paleari, and R. Redondi, "Has ryanair's pricing strategy changed over time? an empirical analysis of its 2006–2007 flights," *Tourism Management*, vol. 31, no. 1, pp. 36–44, 2010.
- [4] T. H. Oum, A. Zhang, and Y. Zhang, "Inter-firm rivalry and firm-specific price elasticities in deregulated airline markets," *Journal of Transport Economics and Policy*, vol. 7, no. 2, pp.171–192, 1993