Developing A Flight Delay Prediction Model Using Machine Learning

TEAM MEMBERS

- AKASHRAM J   (2019115011)

- THARANYAA R   (2019115113)

- VIJAY S   (2019115120)

- GAYATHRI P   (2019115033)

Literature survey

S.NO	TITLE	YEAR	METHODOLOGY	PROS	CONS
1	Flight Delay Prediction Based on Aviation Big Data and Machine Learning	2020	In this paper, random forest-based and LSTM-based architectures have been implemented to predict individual flight delay	The proposed random forest-based model can obtain higher prediction accuracy.	The overfitting problem occurred in the LSTM-based architecture still needs to be solved.

| 2 | Generalized Flight Delay Prediction Method Using Gradient Boosting Decision Tree | 2020 | gradient boosting decision tree (GBDT) | This paper explores a broader spectrum of factors that may potentially affect the flight delay and proposes a gradient boosting decision tree (GBDT) based models for generalized flight delay prediction. | To focus on collecting or generating more training data, extracting more factors may potentially influence the flight delay and applying deep learning method to predict flight delay. |

3	Predicting flight delay based on multiple linear regression	2017	multiple linear regression	The problem was treated as both a regression and an ordinal classification task and a suitable approach, based on the multiple linear regression model, was used to predict the delay	They haven't improve its operational efficiency and accuracy.

4	A machine learning approach for prediction of on-time performance of flights	2017	gradient boosting decision tree (GBDT)	A two-stage predictive model was developed to efficiently predict the departure and arrival delays of flights using flight schedule and weather features.	the departure delay prediction had comparatively higher error rates
5	A deep learning approach to flight delay prediction	2016	This paper investigates the effectiveness of the deep learning models in the air traffic delay prediction tasks	Recurrent Neural Networks (RNN) has shown its great accuracy in modeling sequential data	This paper haven't explore other deep architectures to the prediction and analysis task of flight delays. It may yield important patterns in flight delay data.