

FLIGHT DELAY ANALYSIS



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OVERVIEW

Delay is one of the most important performance indicator of any transportation systems. Flight delay is a challenging problem for all the airline companied. Not only does it affect the airlines but has its negative impacts on the passengers also. Delays lead to penalties, fines and additional operation costs, such as crew and aircrafts retentions in airports for companies. Furthermore, from the sustainability point of view, delays may also cause environment damage by increasing fuel consumptions and gas emission. 31.1% of flights delayed by more than 15 minutes in the United States in 2013, which costed 4 Billions \$.

GOAL

The goal here is to identify flights that are likely to be delayed using the historical flight schedule data in order to improve tactical and operational decisions of airports and airline system. To predict the delays considering weather conditions at 10 Most Weather-Delayed U.S. Major Airports.

<https://weather.com/travel/commuter-conditions/news/most-weather-delayed-air-ports-us-2016>

USE CASES

Flight delay prediction would be beneficial to :

1. Airlines : Since flight delays cause economic consequences to passengers and airlines, recognizing them through prediction may improve marketing decisions
2. Passengers : To help them plan their travel more precisely.

DATA

1. Airline Data : https://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=236
2. Lookup Tables: https://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=236
3. Weather Data

PROCESS OUTLINE

1. Web scrapping the data: We'll work on only the 2016 and 2017 years data.
2. Data Processin

TIME(Days)	TASK
1-4	Web scraping, Exploratory Data Analysis, Data Wrangling
5-8	Model building and selection
9-11	Deployment
11-13	Web application and documentation

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1. Data Wrangling, Handling Missing Data

1. Feature Engineering
2. Selecting the best predictive model
3. Design of the entire pipeline.
4. Deploying the model on Microsoft Azure or Google Cloud Computing Platform

5. Creating a web application to demonstrate the prediction.

TIME CHART

DEPLOYMENT DETAILS

- Language :Python, R
- Deployment and Analysis : Azure
- Pipeline: Luigi
- Cloud : AWS(EC2)

USER INTERFACE

REFERENCE

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