

List of Problem Statements

1. **FLIGHT DELAY PREDICATION** uses certain features of the flight like the airlines who operate them, distance they have to cover, origin and target airport, arrival and departure times and so on. It can help the passengers to know what delays they should be ready to face depending on where they fly from the airlines they choose to fly. It is of immense help to the passengers, airlines and the aviation industry.

2. **Whom does the problem affect?**

- Delay in flight makes passengers concerned and this matter causes extra expenses for the agency and the airport itself. It can affect the trade, because goods' transport is highly dependant on customer trust, which can increase or decrease the ticket sales.

3. **What are the boundaries of the problems?**

- The noise of input data as it requires use of stack denoising autoencoder (SDA)
- Processing a massive amount of data
- Response is highly dependent to experience
- Level of difficulty increases as the number of categories available for classification increases

4. **What is the issue?**

- If any wrong prediction happens, it might have negative impacts, mainly economic, for passengers, airlines and airports. Passengers usually plan to travel many hours earlier for their appointments, increasing their trip costs, to ensure their arrival on time and airlines suffer penalties, fines and additional operation costs.

5. **When does the issue occur?**

- Data cleaning and pre-processing is not done properly in the beginning
- If data is not normalized at the beginning of every modelling
- When the dataset doesn't contain an accurate performance report of all domestic flights within a country
- If the departure time, scheduled arrival, scheduled departure and arrival time are not transformed to a standard HH:MM format
- Even though some flights have high correlation, they do actually arrive on time even after having a delayed departure
- Predicting if a flight will be delayed or cancelled based on weather factors and sudden faults in the flight is quite difficult.

6. **Why is it important to fix the issue?**

- To save the aviation industry from financial loses

-To not cause any inconvenience to the customers which might lead to an increase in travel time which increases the expenses associated with food and lodging and ultimately causes stress.

-To protect the reputation of airlines as they might result in a loss of demand by passengers