

Flight Delay Prediction for Aviation Industry using Machine Learning

Define Problem / Problem Understanding

Business Requirements

To predict flight delays using machine learning, you will need to collect and process a large amount of data on past flight delays. This data should include information such as the flight's departure and arrival times, the airline, the aircraft type, and the weather conditions at the departure and arrival airports. Once you have collected and cleaned the data, you can use a variety of machine learning techniques such as regression, decision trees, or neural networks to train a model that can predict flight delays based on this data. It is important to note that flight delay prediction is a highly complex task and requires a lot of data, but it is possible with the right resources

Business requirements for flight delay prediction typically involve the desire to improve the overall customer experience, reduce operational costs, and increase efficiency in flight scheduling. Specifically, airlines and other stakeholders in the aviation industry seek to predict flight delays as early as possible, so that they can take proactive measures to minimize the impact on passengers and operations.

Here are some more specific business requirements for flight delay prediction:

- 1. Accurate and timely predictions: The ability to accurately predict flight delays in advance is critical. This requires access to real-time data, such as weather updates, flight schedules, and historical performance data, to make predictions as accurate as possible.*
- 2. Automated notifications: Once a flight delay is predicted, automated notifications should be sent to passengers, crew members, and other stakeholders. This allows them to make necessary adjustments to their travel plans and helps to minimize disruptions.*
- 3. Integration with other systems: Flight delay prediction systems should be integrated with other airline systems, such as reservation and ticketing systems, to provide a seamless experience for customers.*
- 4. Cost-effective implementation: The implementation of flight delay prediction systems should be cost-effective, with a focus on minimizing operational costs and maximizing efficiency.*
- 5. Continuous improvement: Flight delay prediction systems should be continuously monitored and improved to ensure that they remain accurate and effective over time.*

Overall, the ability to predict flight delays is a critical requirement for the aviation industry. By accurately predicting delays, airlines can improve the customer experience, reduce operational costs, and increase efficiency in flight scheduling.