DEVELOPING A FLIGHT DELAY PREDICTION MODEL USING MACHINE LEARNING

Submitted By

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Problem Statement:

A problem statement is important to a process improvement project because it helps clearly identify the goals of the project and outline the scope of a project. It also helps guide the activities and decisions of the people who are working on the project. The problem statement can help a business or organization gain support and buy-in for a process improvement project. Flight delays are gradually increasing and bring more financial difficulties and customer dissatisfaction to airline companies. To resolve this situation, supervised machine learning models were implemented to predict flight delays. As explained, the goal of this project is to estimate the probability of any flight to be more than x minutes late, for any x being the difference between the total connection time and the time to go to the departure gate.

Moreover, as we would like to give this information to the customer during the search and reservation process, the model will have to give long-term predictions, up to several months forward, and will not take into account short-term effects, like current weather or traffic situation. This model will be based on the one-year dataset of flight delays.

LITERATURE SURVEY

TITLE	AUTHOR	ALGORITHM	ADVANTAGES	DISADVANTAGE
Flight Departure Time Prediction Based on Deep Learning	Hang Zhou, Weicong Li, Ziqi Jiang, Fanger Cai and Yuting Xue	DEEP LEARNING	1. The deep learning architecture is flexible to be adapted to new problems in the future. 2. The same neural network based approach can be applied to many different applications and data types. 3. Massive parallel computations can be performed using GPUs and are scalable for large volumes	1. It requires very large amount of data in order to perform better than other techniques. 2. It is extremely expensive to train due to complex data models. Moreover deep learning requires expensive GPUs and hundreds of machines. This increases cost to the users. It is not easy to comprehend output based on mere

			of data. Moreover it delivers better performance results when amount of data are huge.	learning and requires classifiers to do so. Convolutional neural network based algorithms perform such tasks.

Airline Flight Delay Prediction Using Machine Learning Models	H.Khasar A.sheikholesa lime	MACHINE LEARNING	1.No human intervention needed (automation) 2.Easily identifies trends and patterns 3. Continuous Improvement 4. Handling multi-dimensional and multi-variety data	1. Data Acquisition 2. Time and Resources 3. Interpretation of Results 4. High error-susceptibility

FLIGHT DELAY PREDICTION USING THE DATA MINING	Adrian, A. A. Simmons	DATA MINING	1. It helps gather reliable information 2. Helps businesses make operational adjustment 3. Helps to make informed decision 4. It helps detect risks and fraud	1 . Data Mining tools are complex and require training to us 2. Data mining techniques are not infallible 3. Rising privacy concern 4. Data mining requires large database
FLIGHT DELAY PREDICTION USING THE AVIATION	RAHUL GARG,SOHAM GOSAVI,	BIG DATA	Reveals that big data analytics has helped businesses to reduce their expenses significantly. 66.7%	The lack of big data experts and data scientists has been the

OF BIG DATA	TEJAS CHOULWAR		of survey respondents from New Vantage claimed that they have started using big data to reduce expenses. Furthermore, 59.4% of survey respondents from Syncsort claimed that big data tools helped them reduce costs and increase operational efficiency.	biggest challenge in this field for the past three years. Currently, many IT professionals don't know how to carry out big data analytics as it requires a different skill set. Thus, finding data scientists who are also experts in big data can be challenging.