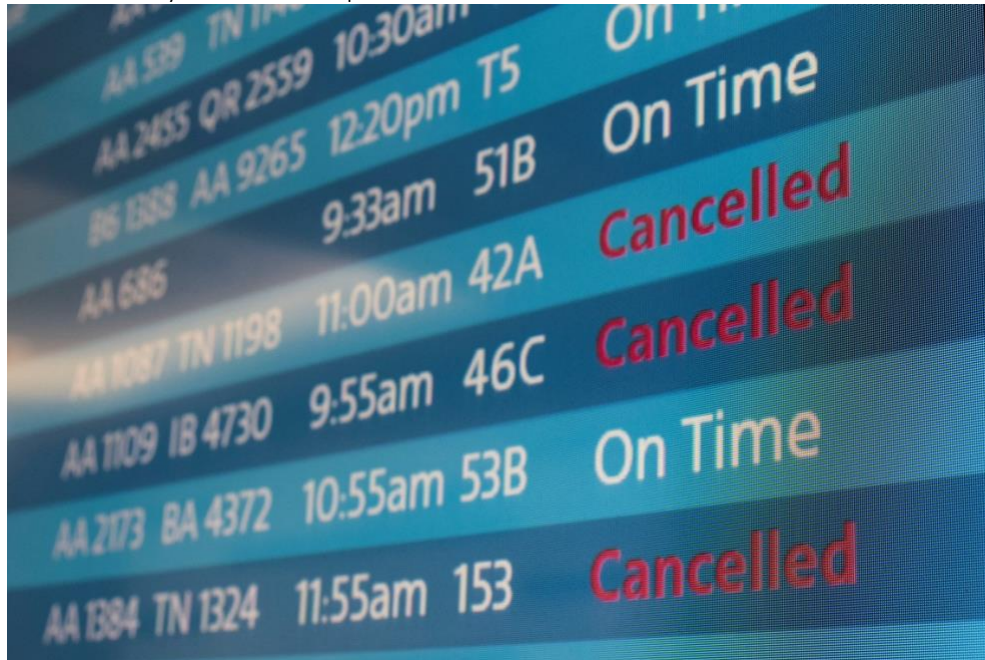


## Airline Scorecard: Which US Airline Is Most Likely to Make You Late?

DS 4002 Case Study - David Nu Nu Marip



Imagine you are planning a trip and trying to decide which airline to trust with your time. Different websites and reports rank airlines in different ways. Some focus on customer reviews, others highlight on time performance, and the results do not always agree.

In this case study you will act as a data scientist who needs to cut through those mixed messages. You will use real flight level data reported to the U.S. Bureau of Transportation Statistics to measure how often major U.S. airlines actually make passengers late, using the federal standard that a flight is on time if it arrives less than 15 minutes after its scheduled arrival.

You will work with domestic flights from 2022 to 2024 for nine major carriers. Your task is to build a clear and fair airline scorecard that compares delay risk across these airlines. You will decide how to treat cancelled flights, how to summarize delay rates, and how to communicate uncertainty in your results. Then you will compare your findings to official BTS rankings and public facing summaries of airline performance from sources like USAFacts, OAG, and AirAdvisor.

Your final deliverable will answer a simple question for a typical traveler. If someone cares most about avoiding a late arrival, which airline would you recommend, and why should they trust your analysis over a headline ranking on a website? You will explain your reasoning in language a non-technical reader can understand, while still grounding your choices in data and well documented methods.

All data preparation instructions, starter code, and reference materials for this project are available in the GitHub repository for this case study:

<https://github.com/davidmarip/CS3-DS4002>