

Crunched Connection

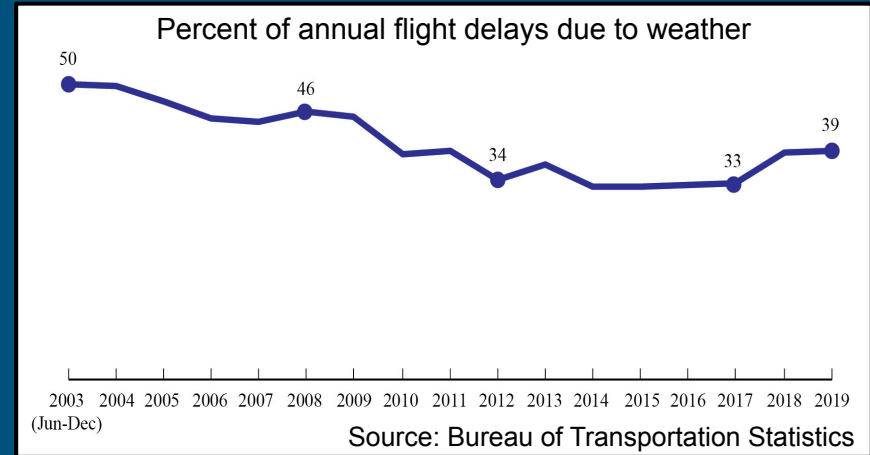
Will weather leave you stranded at the airport?

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Feeling anxious about a tight flight connection?

Over 800 million passengers annually, and over 20% of flights are delayed or cancelled.



Use **Crunched Connection** several days before trip to determine if weather is likely to impact your travel

App relies on flight data, weather forecasts, and machine learning



Flight Itinerary Details

Select Main Carrier

Carrier

Alaska Airlines ▾

Select Departure Information

Departure Airport

SEA ▾

Connecting Airport


TUS ▾

Date

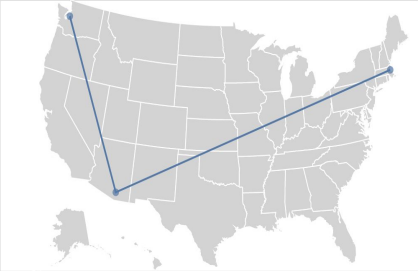
2019/12/31

Scheduled Departure Time

Crunched Connection



Use this tool several days before your flights to determine if severe weather will impact your connection.



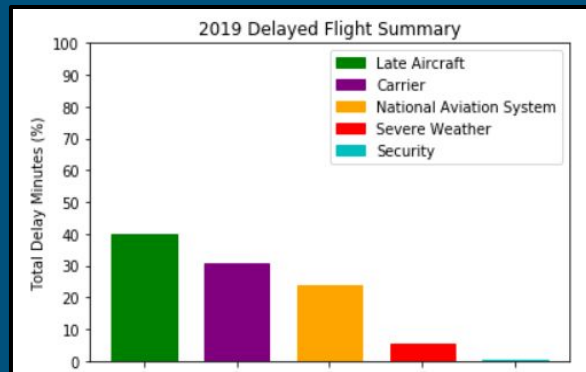
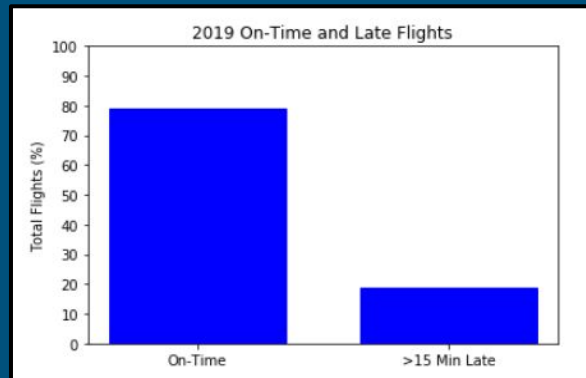
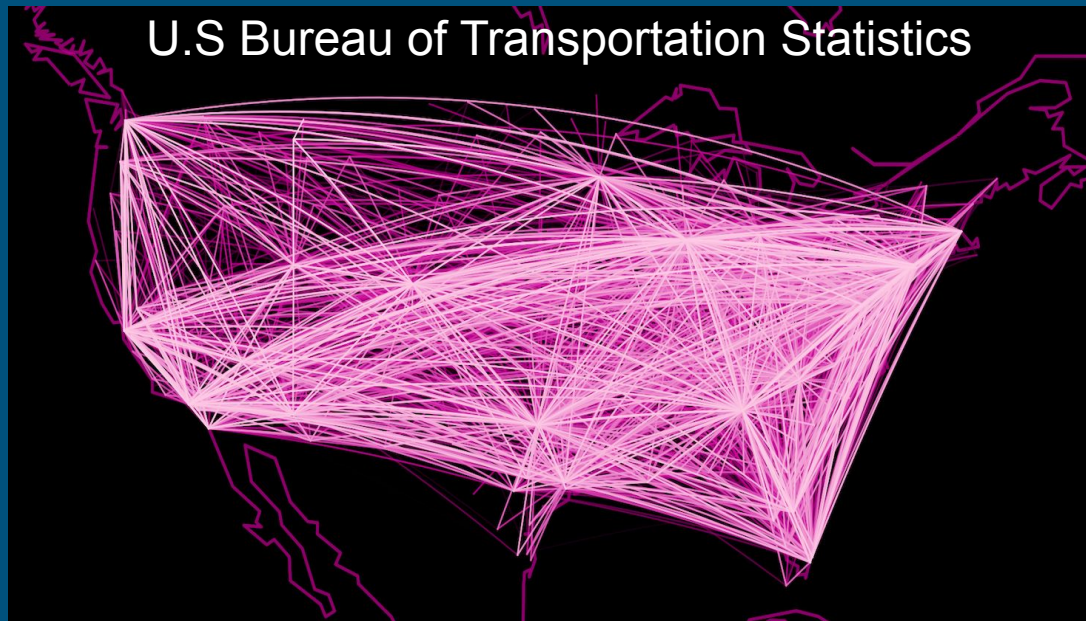
You have 0 hours and 49 minutes to make your connection in TUS.

User input now being ingested into machine learning algorithm...

Your departure flight is 70% likely to be at least 15 minutes late, leaving you with no less than 34 minutes to spare. You are at risk of missing your flight connection!

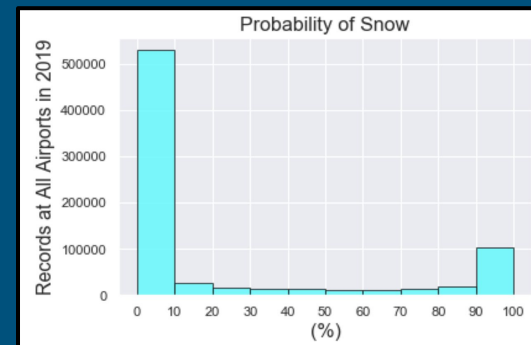
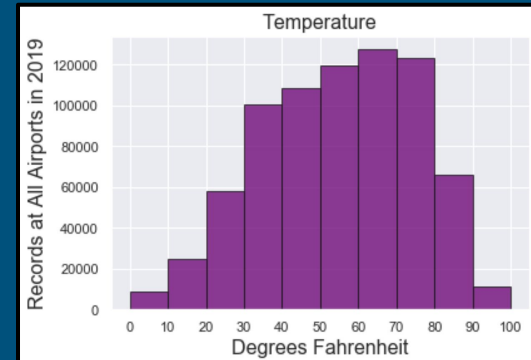
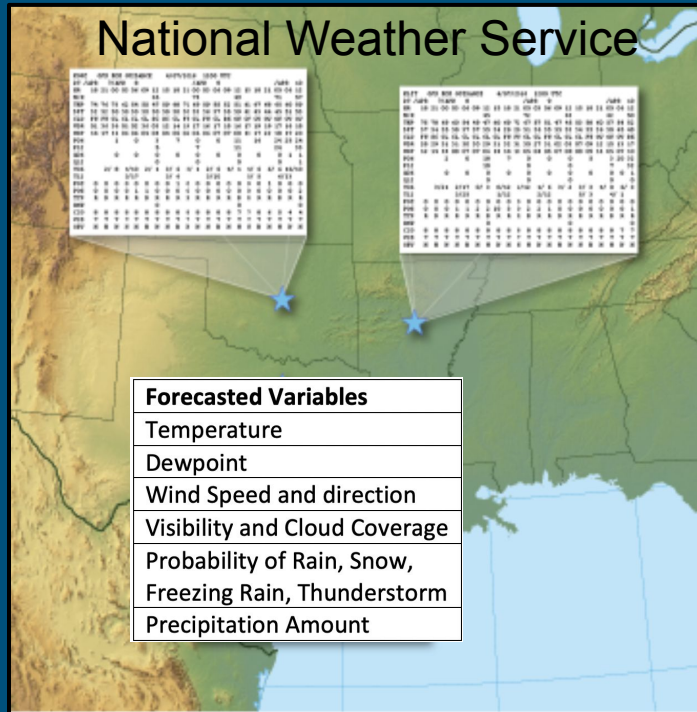
<https://bit.ly/crunchedconnection>

Processed Flight Data: 6,000 city pairs, 7M flights a year



Severe weather impacts
100,000 flights annually

Paired Flight Records with Airport Weather Forecasts



Weather forecasts at departure and arrival airports merged with 2017-2019 flight data

Machine learning can prevent you from getting stranded at the airport!

20 flight and weather features



Probability of precipitation and thunderstorms important



imblearn resampling



random forest



Binary classification
(on-time, over 15 minutes late)

Metrics	Result	Range
Macro-averaged precision	0.86	0 to 1
Macro-averaged F1	0.77	0 to 1



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