

Table 1 - Column values in the NBA dataset

Column name	Relevant?	Type	Constraints/Rules
index	No	—	—
date	Yes	Date	Only dates in the format YYYY-MM-DD.
season	Yes	Integer	Years from 1947 to 2018
neutral	No	—	—
playoff	Yes	String	Only the following values: nan, 't', 'q', 's', 'c', 'f'.
team1	Yes	String	Only 102 abbreviations of team names.
team2	Yes	String	Only 102 abbreviations of team names.
elo1_pre	No	—	—
elo2_pre	No	—	—
elo_prob1	No	—	—
elo_prob2	No	—	—
elo1_post	No	—	—
elo2_post	No	—	—
carmelo1_pre	No	—	—
carmelo2_pre	No	—	—
carmelo1_post	No	—	—
carmelo2_post	No	—	—
carmelo_prob1	No	—	—
carmelo_prob2	No	—	—
score1	Yes	Integer	Positive integers only.
score2	Yes	Integer	Positive integers only.

Table 2 - Column values in the Air Pollution in the US dataset

Column name	Relevant?	Type	Constraints/Rules
Date	Yes	Date	Only data in the format YYYY-MM-DD.
Address	No	—	—
State	Yes	String	Existing state name not abbreviated.
County	Yes	String	Existing county name.
City	Yes	String	Existing city name.
O3 Mean	No	—	—
O3 1st Max Value	No	—	—
O3 1st Max Hour	No	—	—
O3 AQI	Yes	Integer	Positive integers only.
CO Mean	No	—	—
CO 1st Max Value	No	—	—
CO 1st Max Hour	No	—	—
CO AQI	Yes	Integer	Positive integers only.
SO2 Mean	No	—	—
SO2 1st Max Value	No	—	—
SO2 1st Max Hour	No	—	—
SO2 AQI	Yes	Integer	Positive integers only.
NO2 Mean	No	—	—
NO2 1st Max Value	No	—	—
NO2 1st Max Hour	No	—	—
NO2 AQI	Yes	Integer	Positive integers only.

Table 3 - Column values in the Traffic accidents in the US dataset

Column name	Relevant?	Type	Constraints/Rules
ID	No	—	—
Source	No	—	—
Severity	Yes	Integer	Integers with value 1,2,3 or 4 only.
Start_Time	Yes	Date	Only data in the format YYYY-MM-DD HH:MM:SS.
End_Time	No	—	—
Start_Lat	No	—	—
Start_Lng	No	—	—
End_Lat	No	—	—
End_Lng	No	—	—
Distance(mi)	No	—	—
Description	No	—	—
Street	No	—	—
City	Yes	String	None.
County	No	—	—
State	Yes	String	Only abbreviations of state names.
Zipcode	No	—	—
Country	No	—	—
Timezone	No	—	—
Airport_Code	No	—	—
Weather_Timestamp	No	—	—
Temperature(F)	No	—	—
Wind_Chill(F)	No	—	—
Humidity(%)	No	—	—
Pressure(in)	No	—	—
Visibility(mi)	No	—	—
Wind_Direction	No	—	—
Wind_Speed(mph)	No	—	—
Precipitation(in)	No	—	—
Weather_Condition	No	—	—
Amenity	Yes	Boolean	None.
Bump	Yes	Boolean	None.
Crossing	Yes	Boolean	None.
Give_Way	Yes	Boolean	None.
Junction	Yes	Boolean	None.
No_Exit	Yes	Boolean	None.
Railway	Yes	Boolean	None.
Roundabout	Yes	Boolean	None.
Station	Yes	Boolean	None.
Stop	Yes	Boolean	None.
Traffic_Calming	Yes	Boolean	None.
Traffic_Signal	Yes	Boolean	None.
Turning_Loop	No	—	—
Sunrise_Sunset	No	—	—
Civil_Twilight	No	—	—
Astronomical_Twilight	No	—	—

Table 4 - Column values in the NBA teams dataset

Column name	Relevant?	Type	Constraints/Rules
id	No	-	-
full_name	No	-	-
abbreviation	Yes	String	-
nickname	No	-	-
city	Yes	String	-
state	Yes	String	-
year_founded	No	-	-

Table 5 - Correspondences between the datasets and the integrated model

Origin Dataset	From	Target	Type Corresp.	Description
NBA dataset	date	Date	1-1	-
NBA dataset	season	Season	1-1	-
NBA dataset	playoff	Playoff	1-1	-
NBA dataset	team1	Team1	1-1	-
NBA dataset	team2	Team2	1-1	-
NBA dataset	score1	Score1	1-1	-
NBA dataset	score2	Score2	1-1	-
Air Pollution	State	State	1-1	-
Air Pollution	County	County	1-1	-
Air Pollution	City	City	1-1	-
Air Pollution	Date	Date	1-1	-
Air Pollution	O3 AQI	O3 AQI	1-1	-
Air Pollution	CO AQI	CO AQI	1-1	-
Air Pollution	SO2 AQI	SO2 AQI	1-1	-
Air Pollution	NO2 AQI	NO2 AQI	1-1	-
US Traffic	Severity	Severity	1-1	-
US Traffic	Start_Time	Start_Time	1-1	Conversion to the format YYYY-MM-DD
US Traffic	City	City	1-1	-
US Traffic	State	State	1-1	-
US Traffic	Amenity	Amenity	1-1	-
US Traffic	Bump	Bump	1-1	-
US Traffic	Crossing	Crossing	1-1	-
US Traffic	Give_Way	Give_Way	1-1	-
US Traffic	Junction	Junction	1-1	-
US Traffic	No_Exit	No_Exit	1-1	-
US Traffic	Railway	Railway	1-1	-
US Traffic	Roundabout	Roundabout	1-1	-
US Traffic	Station	Station	1-1	-
US Traffic	Stop	Stop	1-1	-
US Traffic	Traffic_Calming	Traffic_Calming	1-1	-
US Traffic	Traffic_Signal	Traffic_Signal	1-1	-
NBA Teams	abbreviation	Abbreviation	1-1	-
NBA Teams	city	city	1-1	-
NBA Teams	state	state	1-1	-