

DATA PROJECT



#10



TRAFFIC DATA



FABIAN WERKMEISTER

DATA

WHAT data

&

WHERE to get it



DATA SOURCE

Vehicle counts on major & minor roads in the UK by

- date
- hour
- region
- road type
- vehicle type
- large dataset (>1 GB)



DATA SOURCE

You can find & download
the dataset on the official
government website

Road traffic data guidance

This document provides guidance on the different datasets available to download for DfT traffic estimates:

[All traffic data metadata \(pdf\)](#)

Bulk downloads

Note: the regional download has been updated so that the data provided aligns with the Road traffic statistics publications on GOV.UK.

Link to data	Description	Format	Years
Raw count data - major and minor roads	Vehicle counts recorded on major and minor roads.	ZIP	2000 - 2021

Year	Count_date	hour	Region_id	Region_name	Region_ons_code	Local_authority_id	Local_authority_name	...	Buses_and_coaches
2011	2011-06-07 00:00:00	11	10	West Midlands	E12000005	69	Worcestershire	...	1.0
2011	2011-06-07 00:00:00	12	10	West Midlands	E12000005	69	Worcestershire	...	1.0
2011	2011-06-07 00:00:00	13	10	West Midlands	E12000005	69	Worcestershire	...	0.0
2011	2011-06-07 00:00:00	14	10	West Midlands	E12000005	69	Worcestershire	...	8.0
2011	2011-06-07 00:00:00	15	10	West Midlands	E12000005	69	Worcestershire	...	8.0



LINK IN NOTION



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DATA TRACKS

SELECT ONE or COMBINE



I - Data Engineering

II - Data Analytics

III - Data Science



TRACK I

DATA ENGINEERING

Feature engineering

- Aggregate the data by date into weeks, months & years
- Group the data by different holidays
- Use the hours to create a time-of-day feature (daytime, noon, evening, night)

TRACK I DATA ENGINEERING



Enrich the days with the historical average fuel prices on that day

Did the prices influence travel behaviour?



SOURCES IN NOTION



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TRACK II

DATA ANALYTICS

Analyse geographical traffic

- Traffic volume by region
- Traffic volume by vehicle type
- Are there regional industrial or tourism clusters?
(indicated by lots of cabs or trucks)



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TRACK II DATA ANALYTICS



Find out average weights
of different vehicles

Which roads are heavily
used in terms of weight
load and need more
maintenace in the future?



TRACK III

DATA SCIENCE

Traffic volume forecast

- Predict traffic volume for different regions
- Predict traffic volume by road category
- Try out a prediction on a hourly and daily basis



TUTORIALS IN NOTION



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TRACK III

DATA SCIENCE



Identify and visualize
sudden spikes or drops in
traffic volume

What are the causes of
these anomalies?
(holidays, events, roadworks)



TUTORIALS IN NOTION



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HOLIDAY CHALLENGE



DRIVING HOME FOR ... EASTER?!

Compare traffic volume in
bigger cities vs. rural areas



Are there significantly
more cars on the streets
due to people traveling
home from their city job
during the holidays?



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LEARNINGS



why YOU

should do

this project



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LEARNINGS

Track I - Data Engineering

Feature engineering, Data enrichment, Working with big data

Track II - Data Analytics

Categorical & regional data analysis, Connecting information

Track III - Data Science

Volume forecast, Anomaly detection



**WHAT WOULD
YOU DO WITH
THIS DATA?**

**SEE YOU IN
THE COMMENTS**



HI, I'M FABIAN



**I HELP YOU
TO BECOME
FLUENT IN DATA**



FOR PROJECT IDEAS EACH FRIDAY

+ Follow

& hit the 



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 **BONUS** 



FREE Data



Notion Space



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DATA NOTION SPACE

Fabian Werkmeister

I help you to become fluent in Data and enable you to translate between business & tech ★ Data Scientist @FUNKE ★  Python
 Data Science  Data Engineering

Talks about #data, #python, #mindset, #datascience, and #productivity

Hamburg, Hamburg, Germany · [Contact info](#)

[FREE Data Notion Space](#) 



✓ All Project Resources

✓ Project Management Tools

✓ Tutorials & Learning Roadmap



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DATA NOTION SPACE

Simply click "Duplicate" and get
your very own Notion Data space

The screenshot shows a Notion workspace interface. At the top, there is a search bar with the words "Search" and "Duplicate" highlighted by a hand-drawn style orange circle. To the right of the search bar is the Notion logo. A large orange arrow points downwards from the search bar area towards a grid of nine cards. The grid contains the following cards:

- 1 Project Structure**: An image of a large building under construction with cranes.
- 2 Data Collection**: An image of hands holding chestnuts next to a bucket.
- 3 Data Cleaning**: An image of a hand holding a yellow spray bottle.
- 4 Data Exploration & Analysis**: An image of people looking at a map.
- 5 Preprocessing & Feature Engineering**: An image of various tools like pliers and a hammer.
- 6 Modeling & Evaluation**: An image of several small robots.
- 7 Productionize Model**: An image of a large cargo ship.
- 8 Showcase Results**: An image of a clapperboard.
- 9 Summary & Retrospective**: An image of a sunset sky.

