

T_RTRANSRATER

PREDICT TRANSPORTATION COST EASIER

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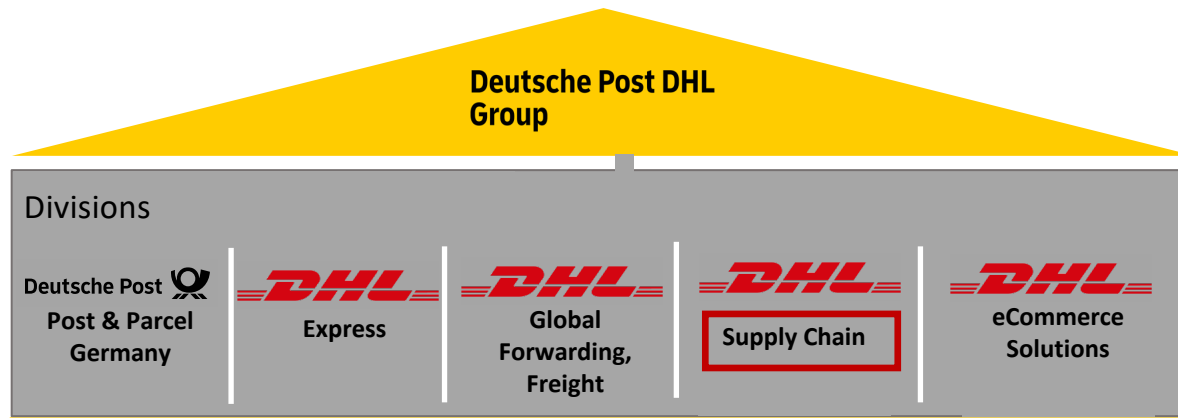
Supported By Global Operations Science & Analytics Team



About DHL Supply Chain



DHL Supply Chain is a division of Deutsche Post DHL Group with a global network and an extensive logistics portfolio that deals with warehousing, transport and VAS for other companies



DHL Supply Chain is the

#1

Contract Logistics Provider

Managing Supply Chains
to reduce complexities



50+
Countries Covered

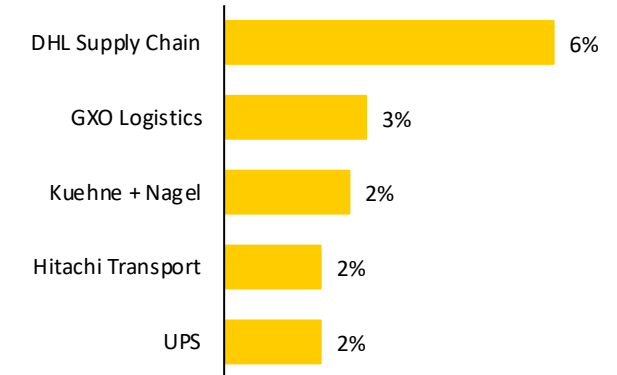


~160M
sq. footage of storage space

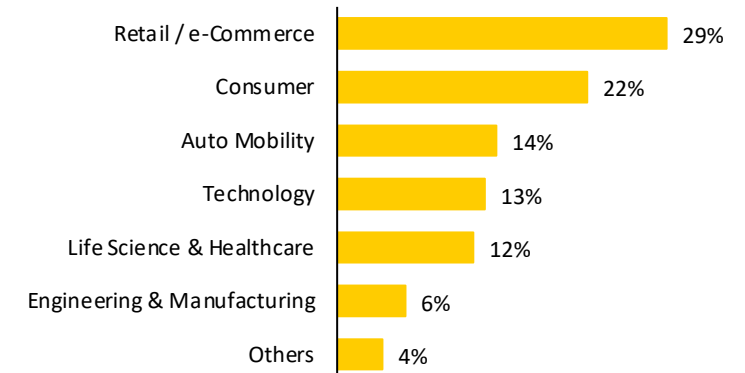


~ € 14bn
Revenue

Market Position



2021 Revenue Mix





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TransRater Domain Knowledge



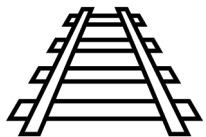
DHL Transportation Solution Team quotes third-party companies contract prices or spot prices to find feasible transportation solutions for client's shipments



TruckLoad Shipment (TL)



Less-Than-TruckLoad Shipment (LTL)



Intermodal Shipment (Railway)



DHL Transport Solution Team:

- The team considers quoted price in different data frames as a benchmark to find lowest price
- The team will save quoted price and historical shipments in the database

With available historical shipment data and quoted price data:

A Learning models is asked to **predict future transportation rates** by inputting available shipment information and quoted price.

TransRater Overview



TransRater has a User Interface to help Transportation Solution Teams predict transportation quoted price

Historical Shipment Data (MT_Data)

Description: The dataset includes 4-month historical shipment information

Column: 31

Rows: 4,963,508

Historical Quoted Price Data (DAT_Data)

Description: The dataset includes 4-month historical quoted price data information

Column: 40

Rows: 63,486

TransRater Training Data

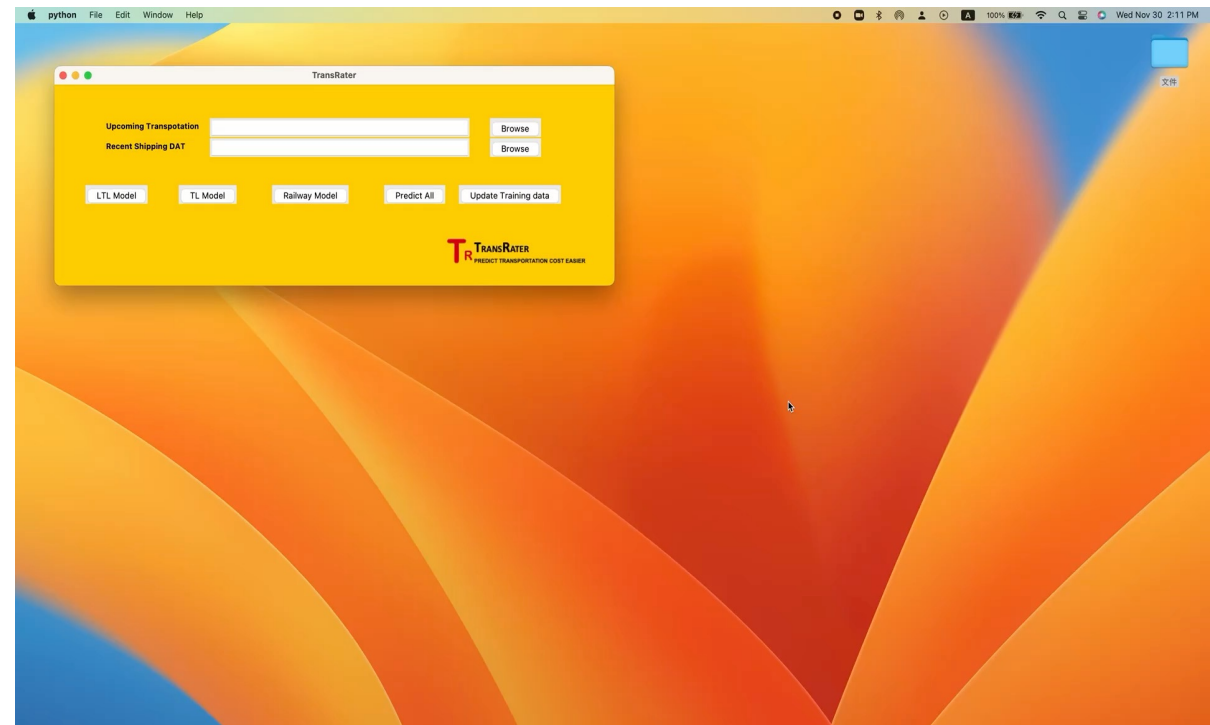
Description: The data is based on MT_Data and Data_Data

Columns: 27

Rows: Over 6,000,000

Format: Documents

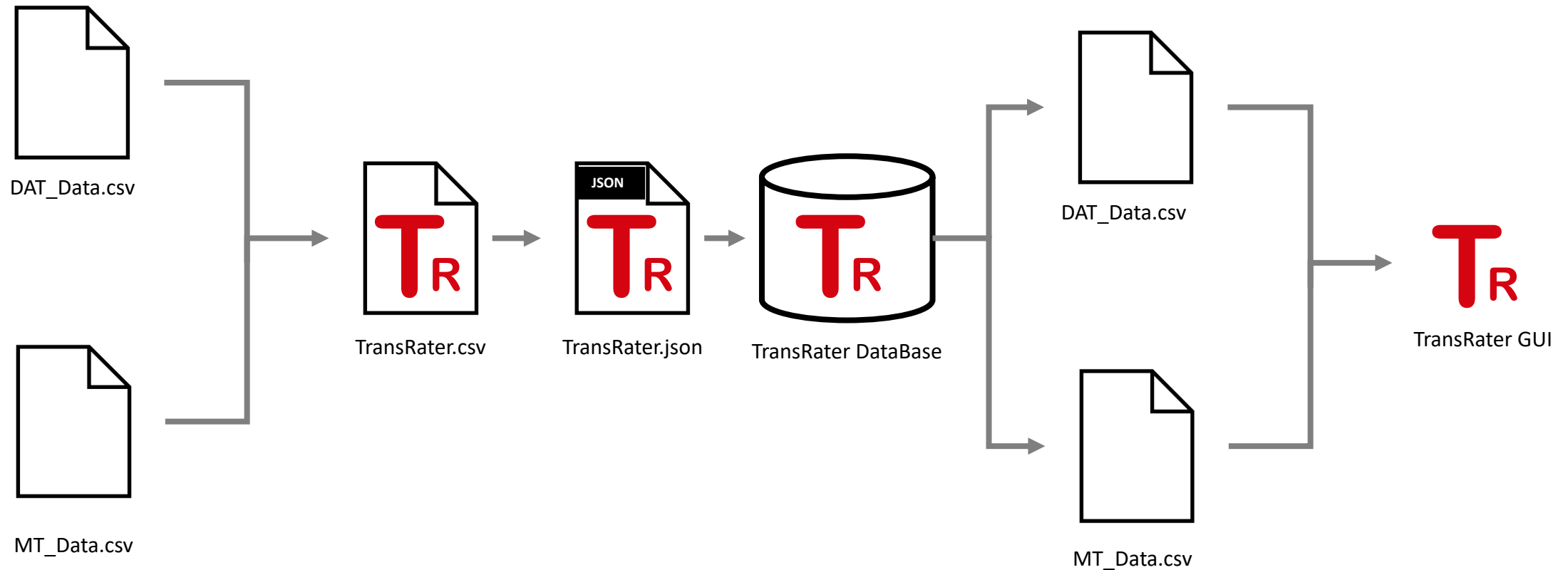
TransRater Graphics User Interface



TransRater Overview



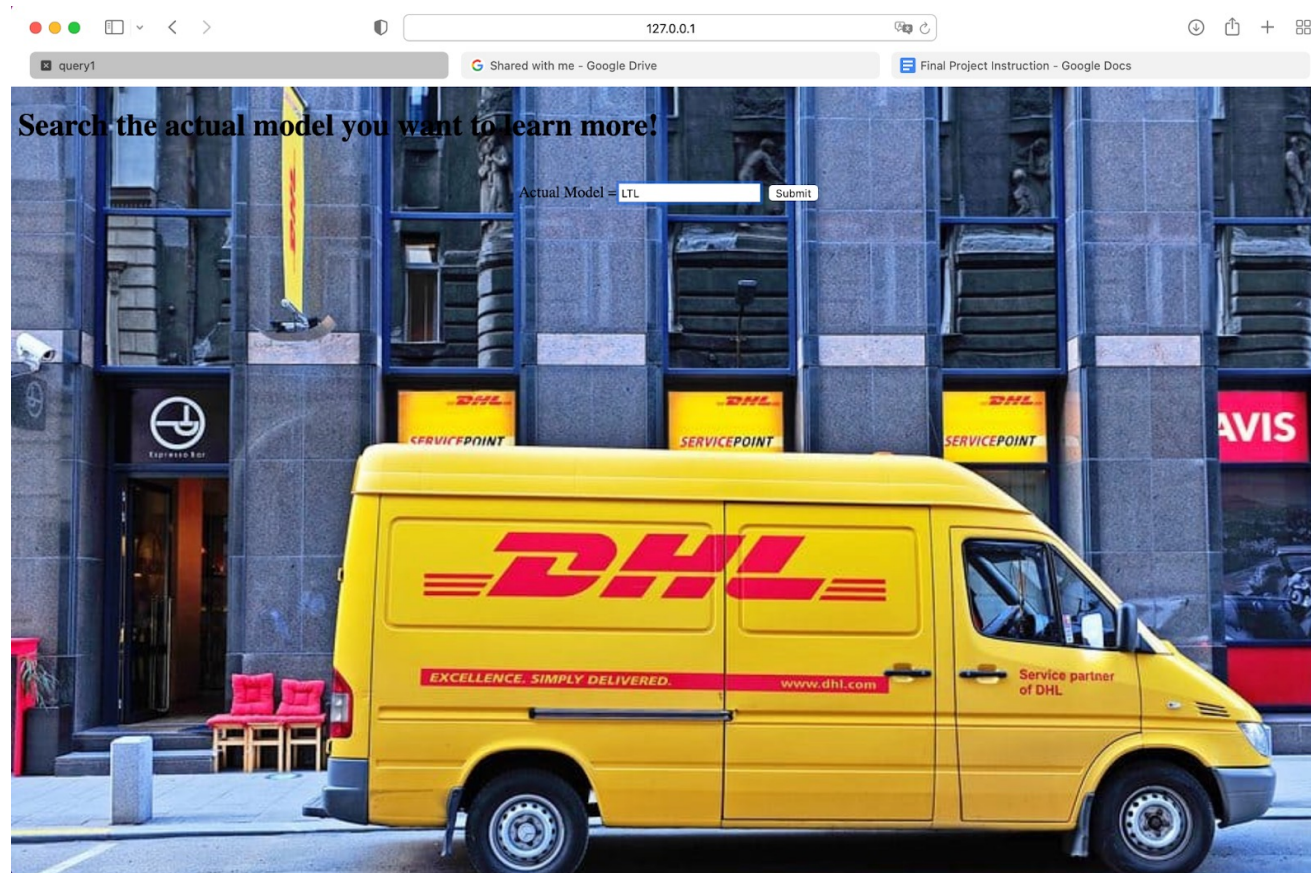
Raw TransRater's data is saved as a CSV file after merging DAT_Data and MT_Data



TransRater Database Demo



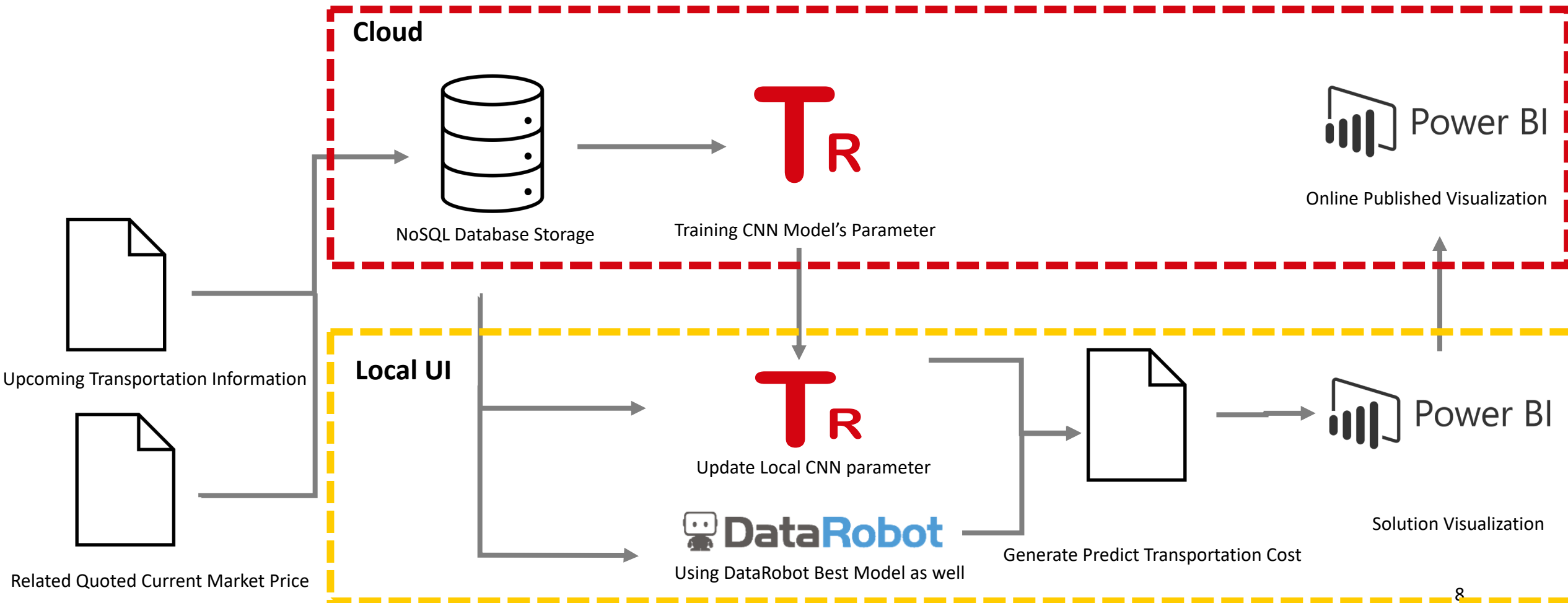
TransRater has a User Interface to help Transportation Solution Teams predict transportation quoted price



TransRater Conclusion - Completed Working Flow Overview



Rather than complete TransRater for the current class requirement, the complete working flow will include more steps



TransRater Challenge



TransRater has a User Interface to help Transportation Solution Teams predict transportation quoted price

Challenge	Description
Document Format	<ul style="list-style-type: none"> JSON File is larger than csv file Need find a balance between database capacity and real-life demand Other NOSQL databases are worth to try
Query	<ul style="list-style-type: none"> Need build more queries for deeper database management Current queries may have bug once more data load in the database There is language different between PyMongo and Mongosh
UI	<ul style="list-style-type: none"> Flask design difficulty and maintenance difficulty. Need add multiprocessing to run Flask database UI and TransRater Tkinter UI at the same time The current version does not support NN model's hyperparameter change in model training