Data overload: Opportunities and Challenges

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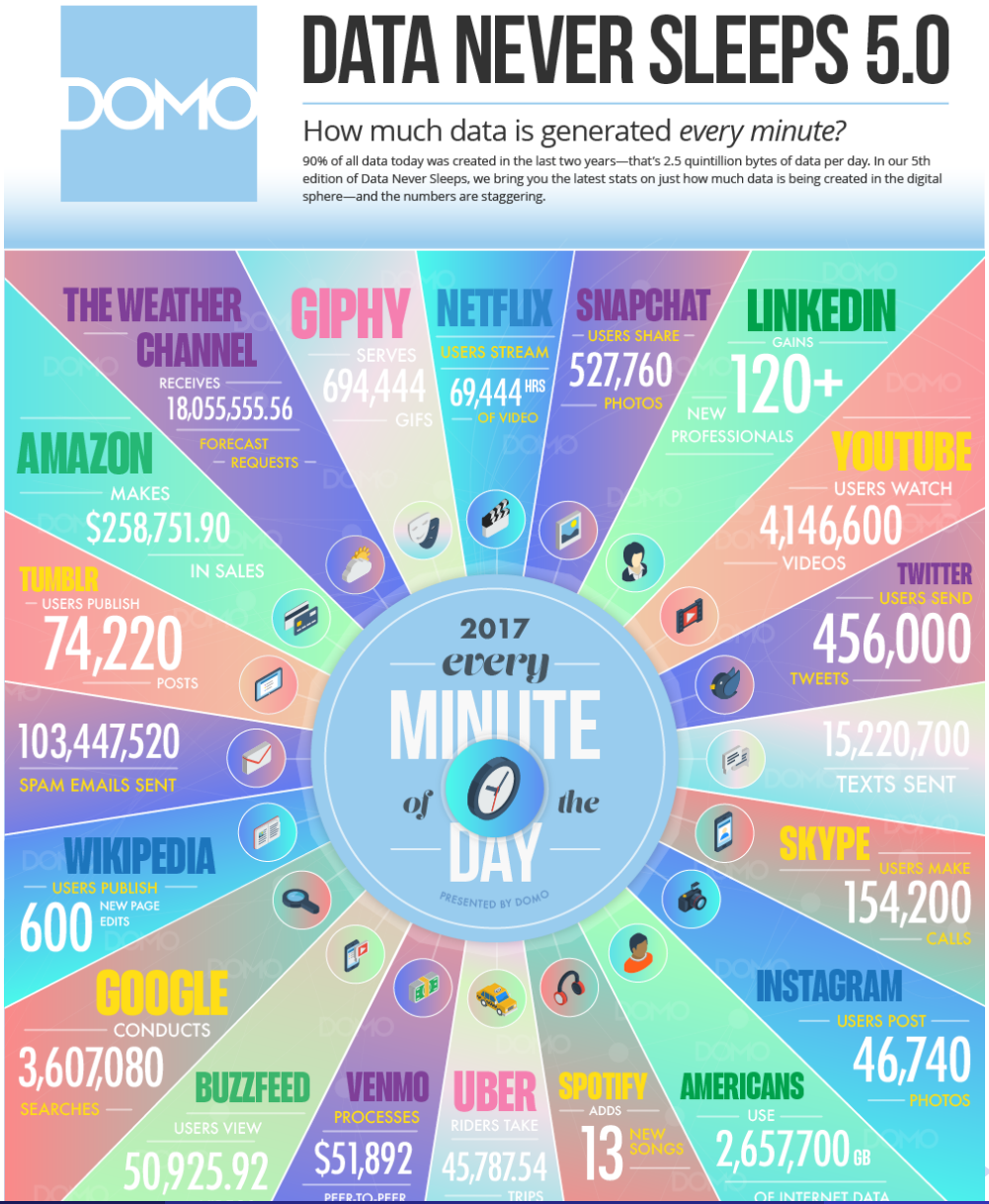
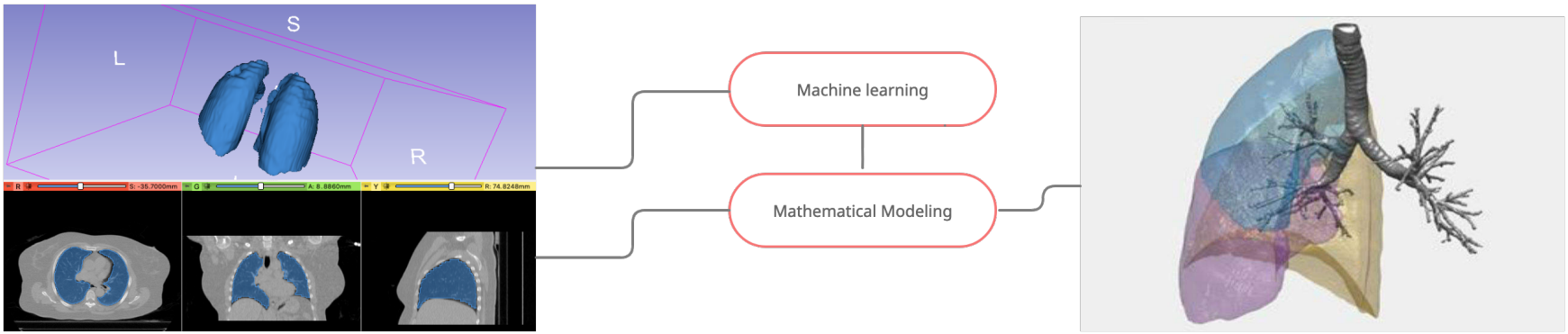
Overview

1. The ubiquity of data
2. Opportunities
3. Challenges
4. Workflow and tool

The ubiquity of data



Opportunities in healthcare



Accurately predict Cancer tumour movement by using

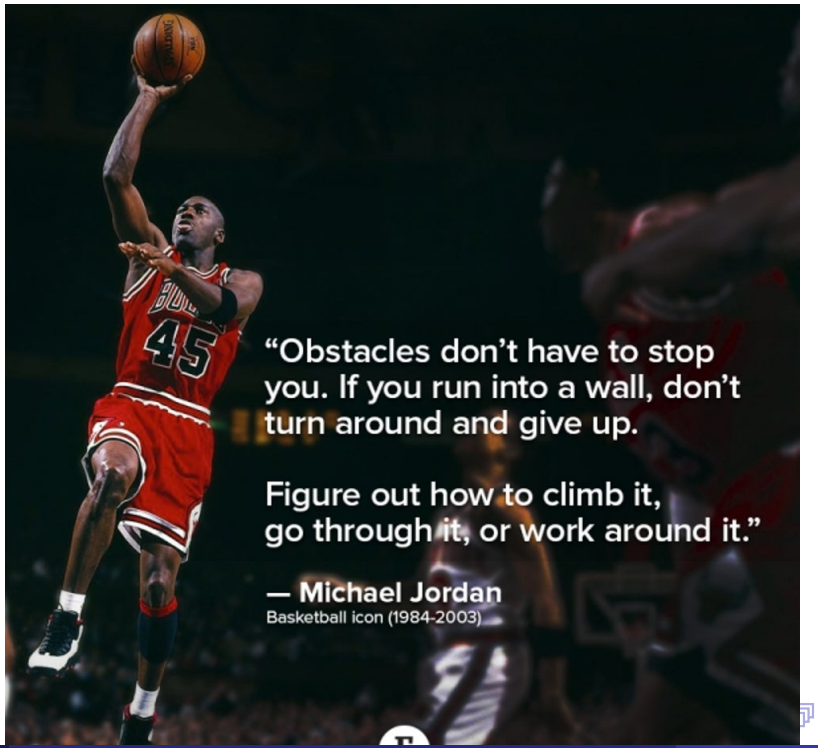
- Medical images (CT, 4DCT, MRI, . . .)
- External sensor data collected from a patient

Opportunities food industry

"We have the ability to not only look at a consumer as an individual and assess their buying patterns, but also look at the multiple consumers residing within a household, understand who is the dominant buyer, who reacts to our coupons, and, foremost, understand how they react to the channel that they're coming to us on," says Djuric.

Challenges

- Thousand of data sources to extract information from
- Data quality issue
- From Gigabits to Terabits of data to process and analyse
- Data privacy concern
- Data quality concern
- A **scalable**, **secure** , **well governed** and **reliable** data management platform



Data pipeline

The data journey from its source to the value that it brings:

- Data ingestion ✔
- Data storing ✔
- Data quality assessment ✔
- data modelling ✔
- Data transformation
- Data analytics

While tracking Data Lineage: Set of transformation that data goes through

Data pipeline

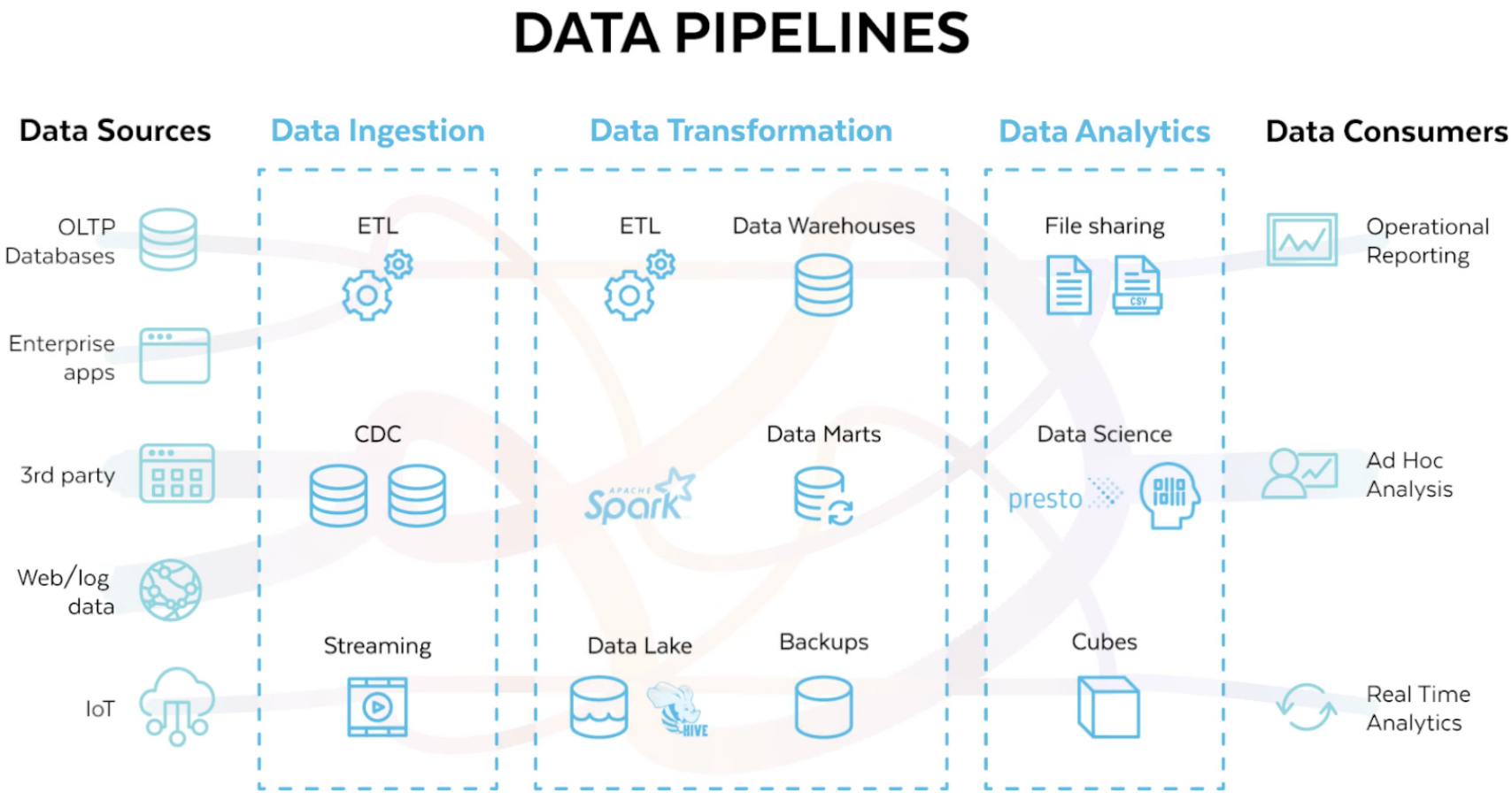
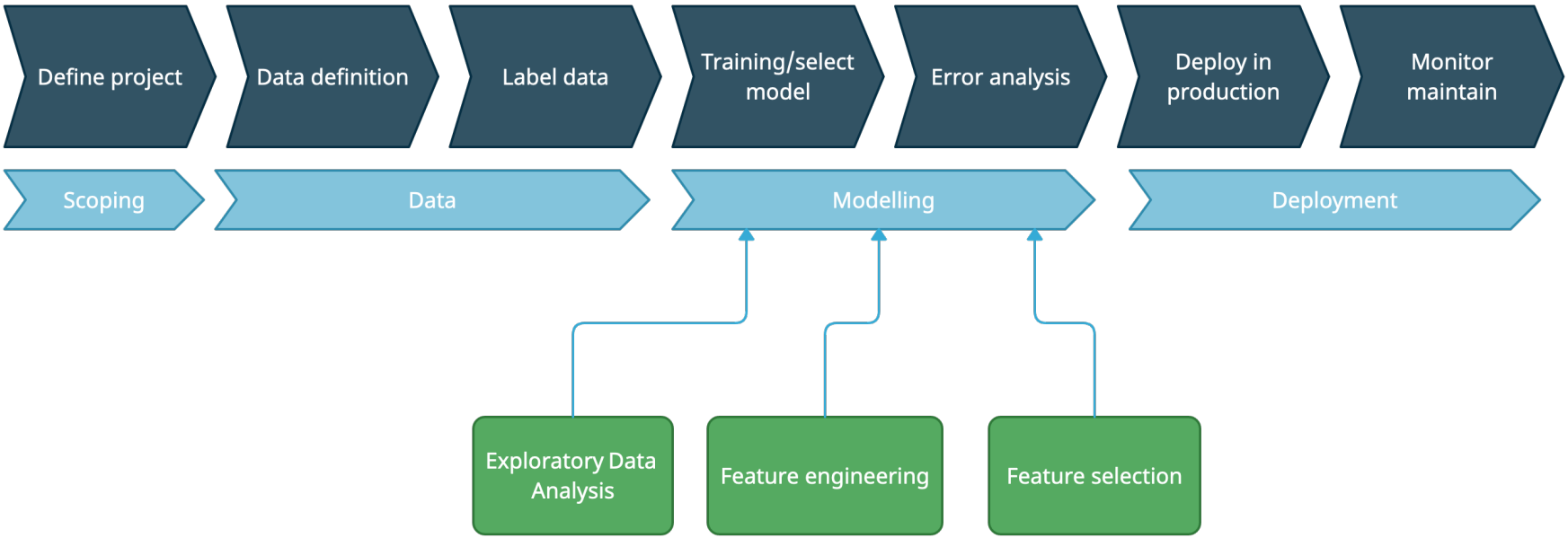


Figure: Cortesie https://www.snowflake.com/guides/etl-pipeline

Tools

Data ingestion

Data storage

Data science

Machine learning pipeline