Predictive Analytics

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What is Predictive Analytics

Predictive analytics uses historical data to predict future events. Typically, historical data is used to build a mathematical model that captures important trends. That predictive model is then used on current data to predict what will happen next, or to suggest actions to take for optimal outcomes.

Predictive analytics helps teams in industries as diverse as finance, healthcare, pharmaceuticals, automotive, aerospace, and manufacturing.

Automotive – Breaking new ground with autonomous vehicles
Companies developing driver assistance technology and new autonomous vehicles use predictive analytics to analyze sensor data from connected vehicles and to build driver assistance algorithms.
Aerospace – Monitoring aircraft engine health
To improve aircraft up-time and reduce maintenance costs, an engine manufacturer created a real-time analytics application to predict subsystem performance for oil, fuel, liftoff, mechanical health, and controls.
Energy Production – Forecasting electricity price and demand
Sophisticated forecasting apps use models that monitor plant availability, historical trends, seasonality, and weather.
Financial Services – Developing credit risk models
Financial institutions use machine learning techniques and quantitative tools to predict credit risk.
Industrial Automation and Machinery – Predicting machine failures
A plastic and thin film producer saves 50,000 Euros monthly using a health monitoring and predictive maintenance application that reduces downtime and minimizes waste.
Medical Devices – Using pattern-detection algorithms to spot asthma and COPD
An asthma management device records and analyzes patients' breathing sounds and provides instant feedback via a smartphone app to help patients manage asthma and COPD.

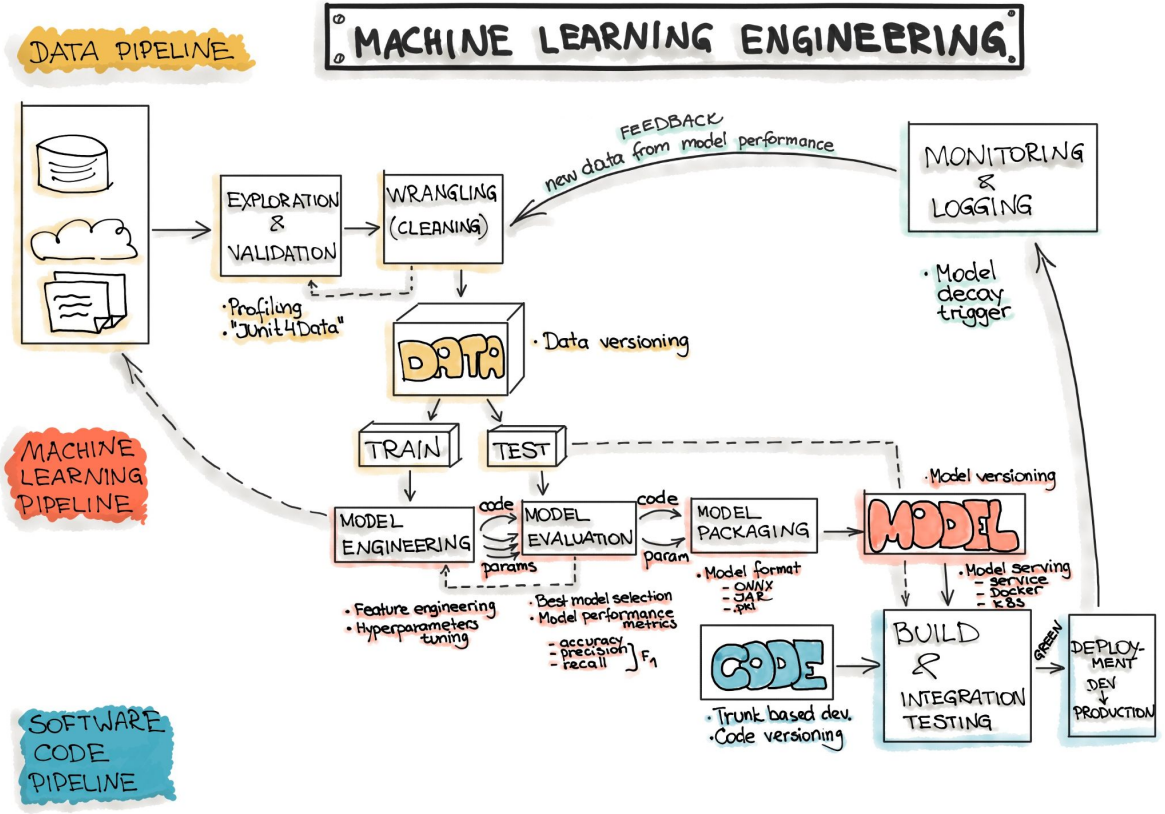
Source: www.mathworks.com

How it works

Predictive analytics is the process of using data analytics to make predictions based on data. This process uses data along with analysis, statistics, and machine learning techniques to create a predictive model for forecasting future events.

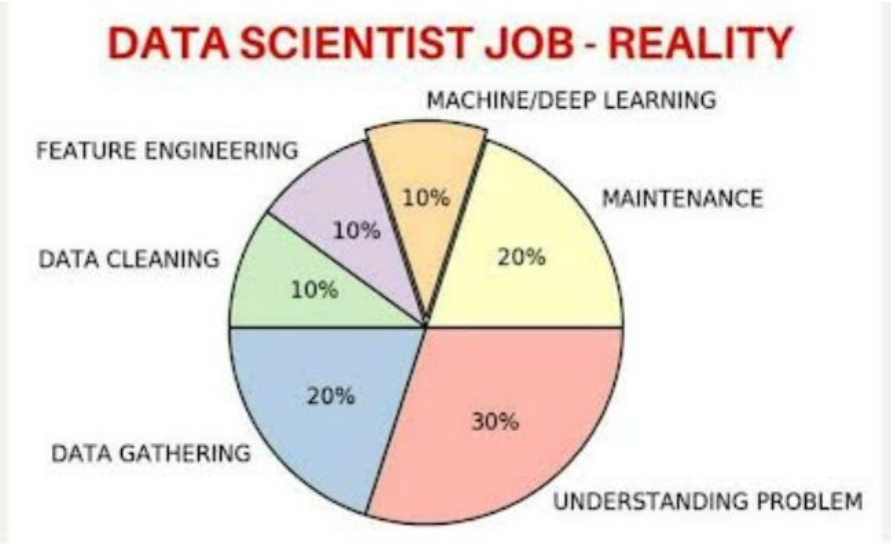
Predictive analytics starts with a business goal: to use data to reduce waste, save time, or cut costs. The process harnesses heterogeneous, often massive, data sets into models that can generate clear, actionable outcomes to support achieving that goal, such as less material waste, less stocked inventory, and manufactured product that meets specifications.

Image Source: Google Images



Steps in any Machine Learning Projects

- Understand the problem
- Get the data
- Explore the data
- Prepare the data
- Model the data
- Fine-tune the models
- Present the solution
- Create Pipeline for Model
- Deploy the ML Model



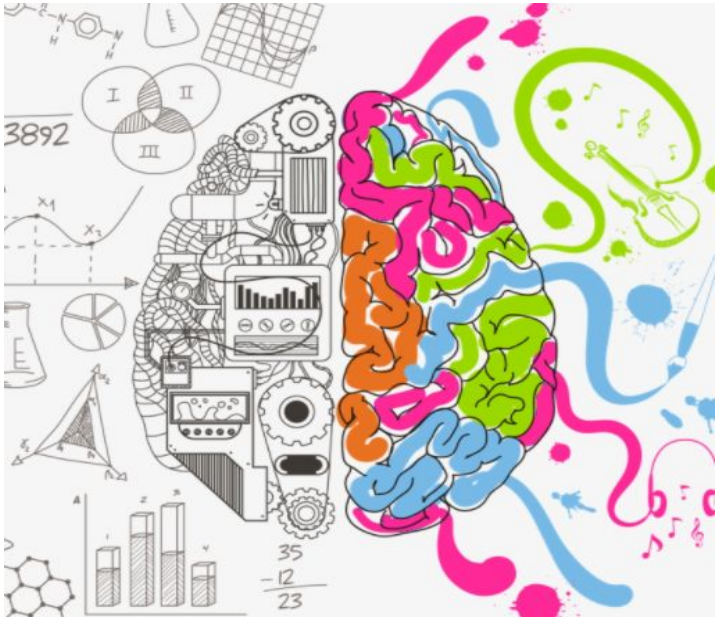
Other: https://www.analyticsvidhya.com/blog/2021/04/steps-to-complete-a-machine-learning-project/

For ML/DL/NLP Project

https://www.kaggle.com/

https://www.analyticsvidhya.com/

https://www.kdnuggets.com/



Talk to your colleagues about anything or everything about company/business, As domain knowledge can't be googled, It come when we socialize with our colleagues at work over time.