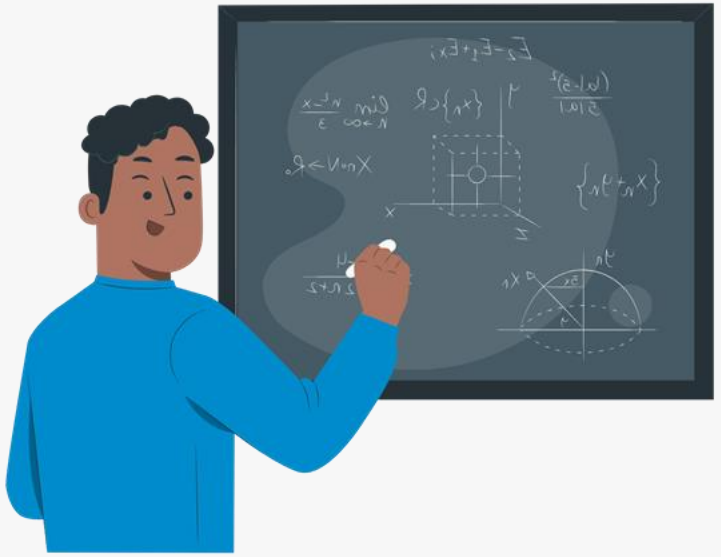
The Problem with our Prediction

The Problem with our Prediction

Definitions	Aggregation function
Mean Absolute Error	307
Mean of the Units_sold	1150

The Problem with our Prediction



Our problem is multifaceted.

- There are many other features to consider.
- Understand the intricate relationships to predict the target variable accurately.

The Problem with our Prediction

Factors that influence Units Sold

Customer Reviews

Page Traffic

Festive Season

The Problem with our Prediction

Factors that influence Units Sold

Customer Reviews

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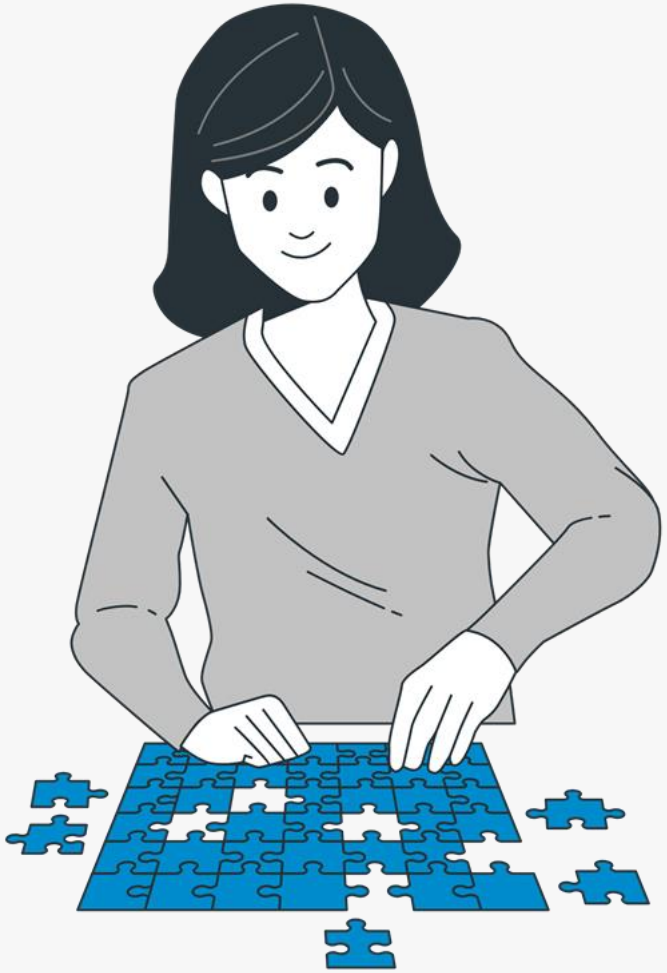
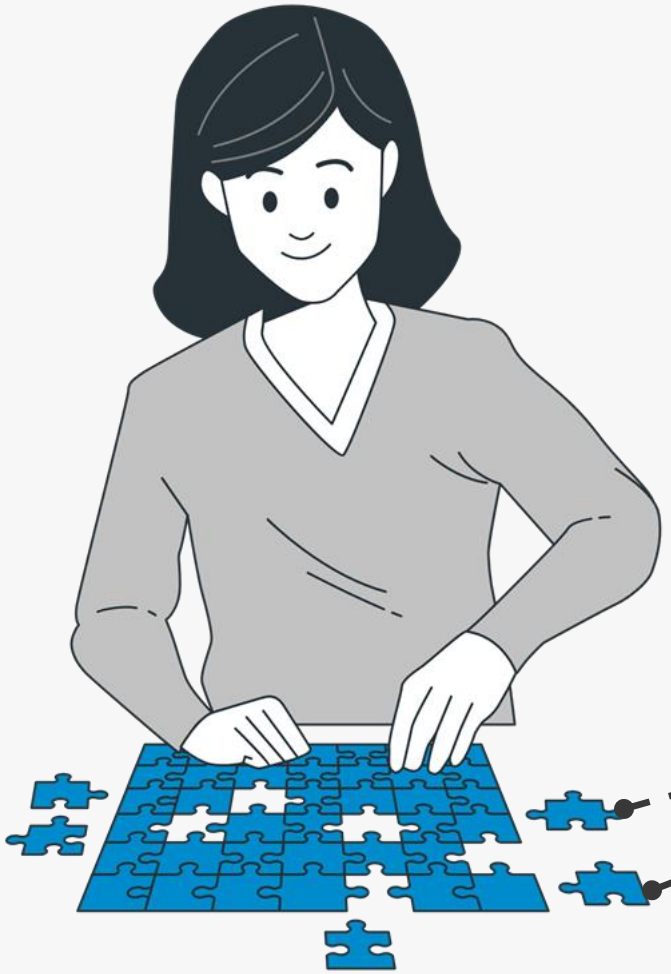
The Problem with our Prediction

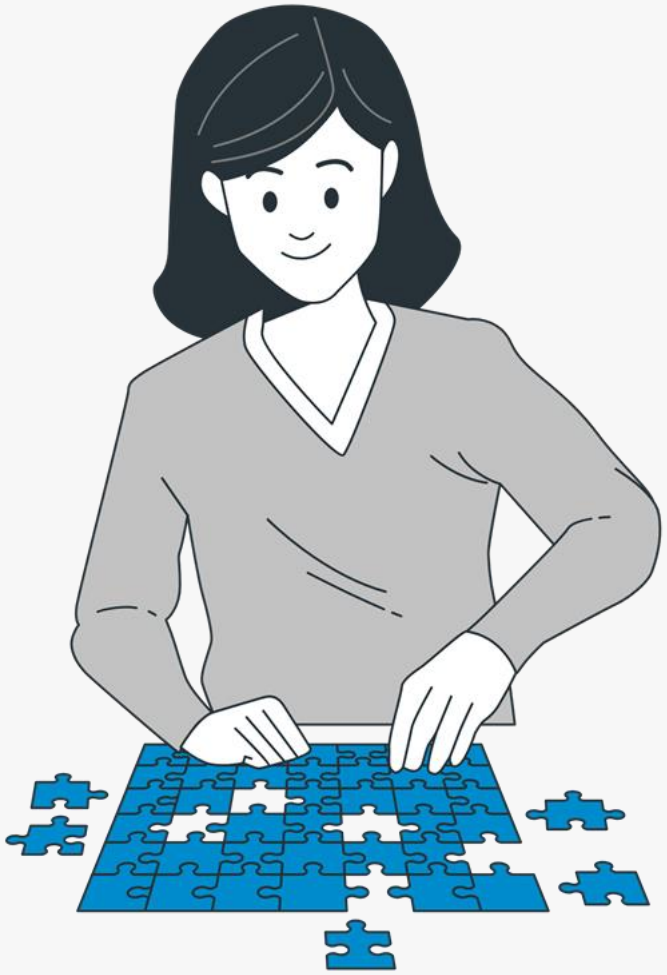


The Problem with our Prediction



A feature of the data and its relationship to the desired outcome

Understanding Our Problem



Manually finding rules for complex data can be overwhelming and seemingly impossible.

Machine Learning

Machine Learning

Machine learning is an intelligent assistant that can learn from the data, identify hidden patterns, and automatically build complex rules.

Machine Learning v/s Rule Based Predictions

Rule Based System v/s Machine Learning

Data

Human Analysis

Rules for Prediction

Rule Based System

Rule Based System v/s Machine Learning

Data → Machine Learning Algorithm → Rules for Prediction

Machine Learning Based System

Rule Based System v/s Machine Learning

Simple Problems

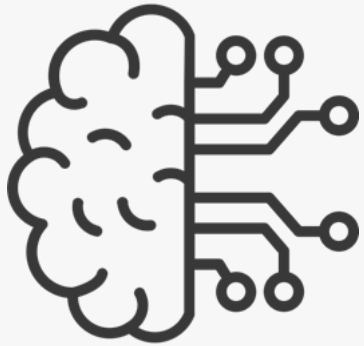
Humans can make good predictions

Rule Based System v/s Machine Learning

Simple Problems

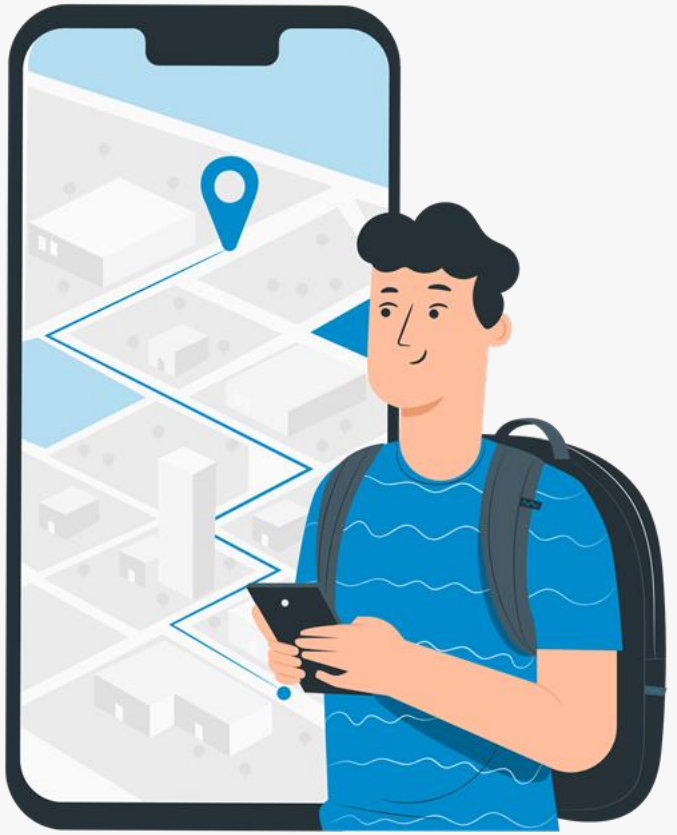
Humans can make good predictions

Complex Problems



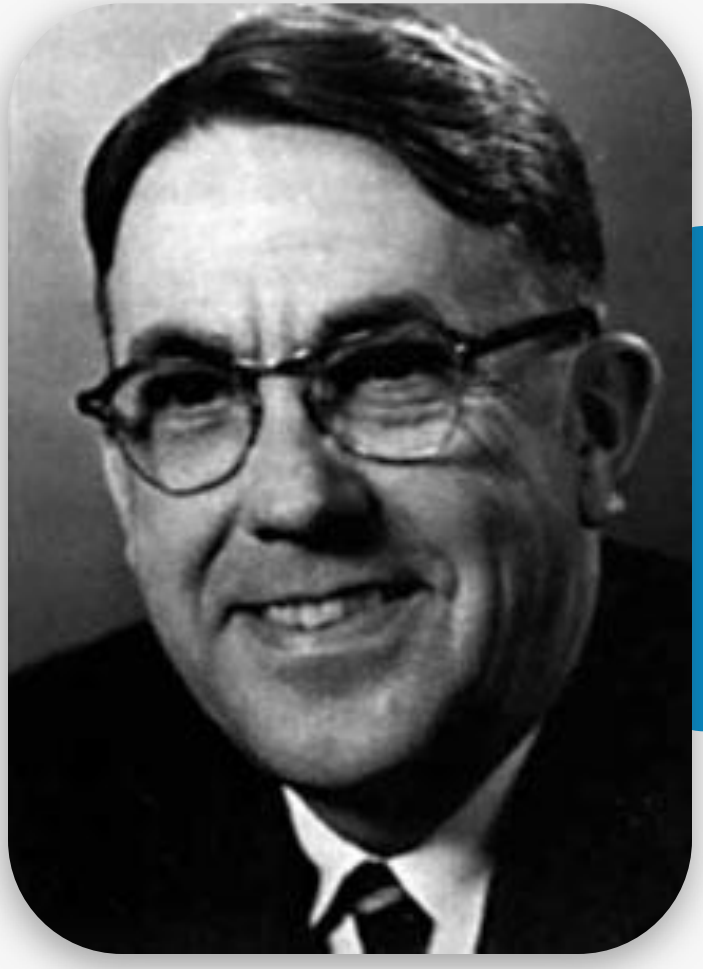
Machine Learning algorithms are more efficient

Rule Based System v/s Machine Learning



We generally use our memory to navigate familiar places but rely on GPS for longer or more complex routes.

Rule Based System v/s Machine Learning



"Machine learning is a field of study, that gives computers the ability to learn without being explicitly programmed."

- Arthur Samuel, 1959

Rule Based System v/s Machine Learning

The Machine Learning algorithms learn the rules to make predictions on data by **learning from different instances of data** with being given any hard-coded guidelines.

Rule Based System v/s Machine Learning

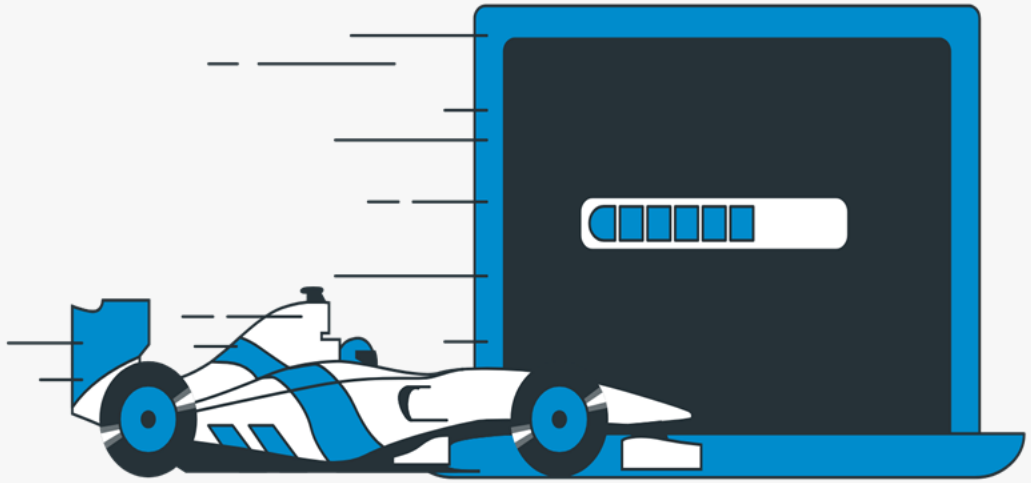
The Machine Learning algorithms learn the rules to make predictions on data by **learning from different instances of data** with being given any hard-coded guidelines.

To reduce error in data provided

Advantages of Machine Learning

Adaptability and Speed

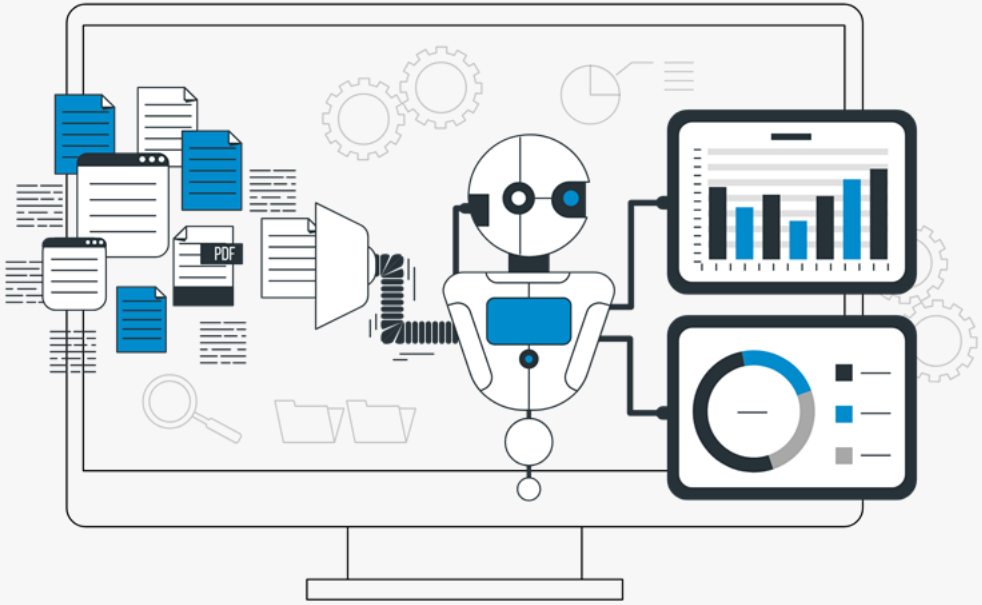
Machine learning algorithms learn quickly analyzing large amounts of data, while humans may struggle to with extensive datasets.



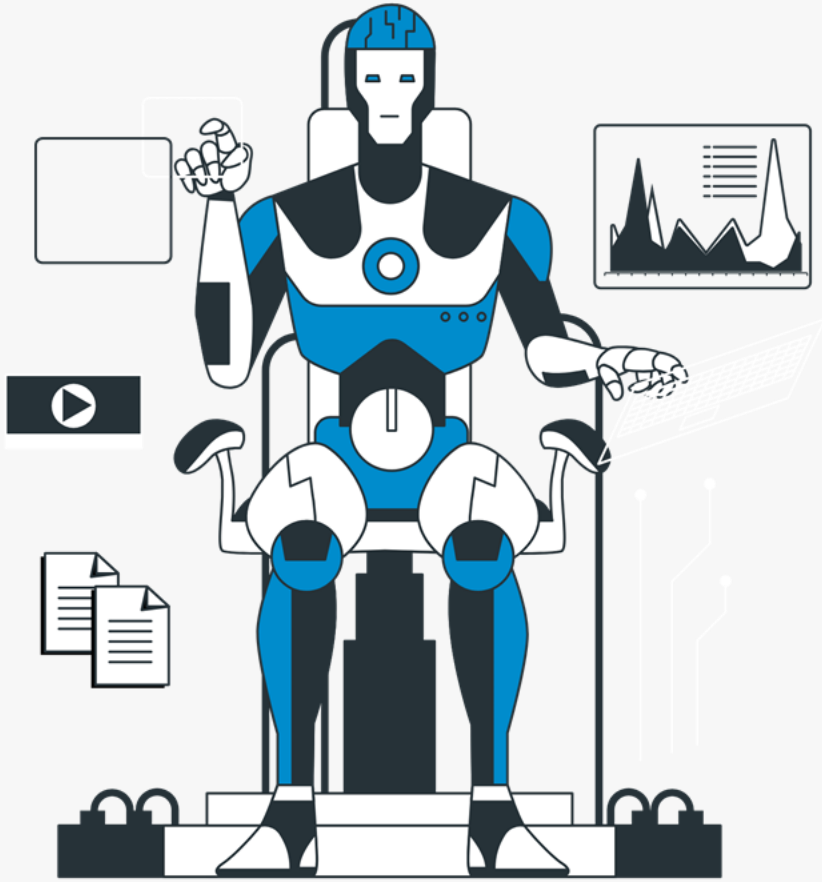
Advantages of Machine Learning

Scalability

Machine Learning algorithms efficiently process and analyze the information as the dataset grows.



Advantages of Machine Learning

Consistency and Objectivity

Machine Learning algorithms do not tire while learning the rules for predictions or making predictions based on the rules and do not have any biases unlike humans.