PROFIT PREDICTION USING MACHINE LEARNING

Outline

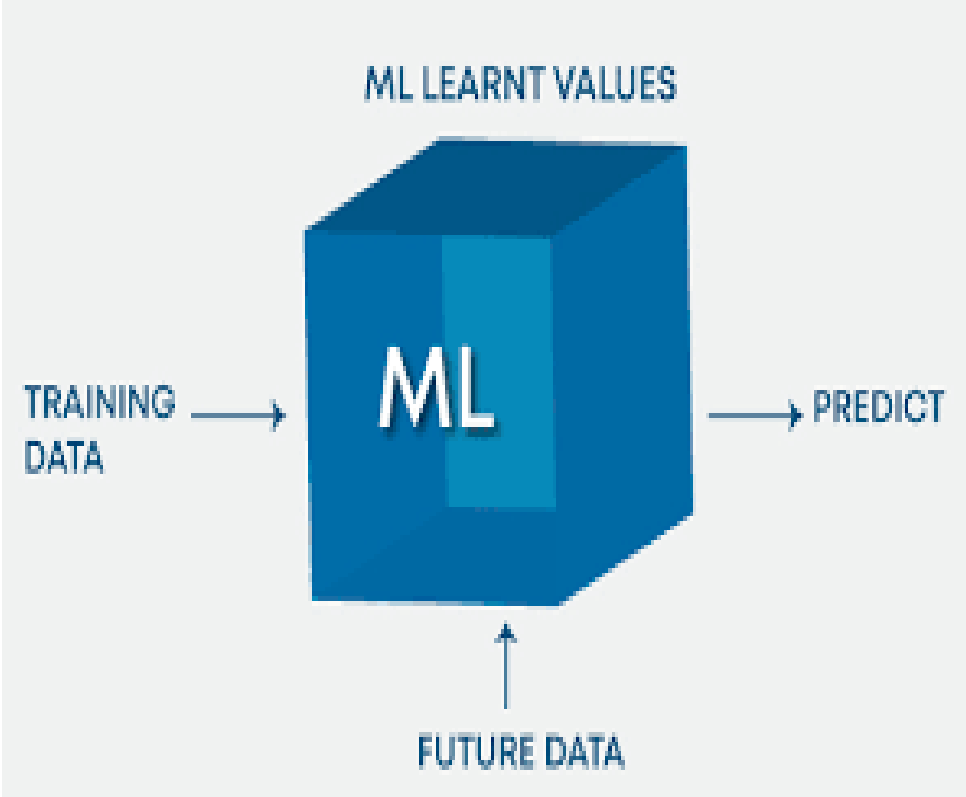
- What is Data Science & Machine Learning
- Why ML
- ML in profit prediction
- ML models
- Training & Testing
- Performance
- Advantages
- conclusion

WHAT IS DATA SCIENCE

- Data science is the study of data to extract meaningful insights for business.
- This analysis helps to ask and answer questions like what happened, why it happened, what will happen, and what can be done with the results.

WHAT IS ML

- Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so.
- Types of ML
  - Supervised
  - Non-supervised
  - Semi-supervised
  - Reinforcement



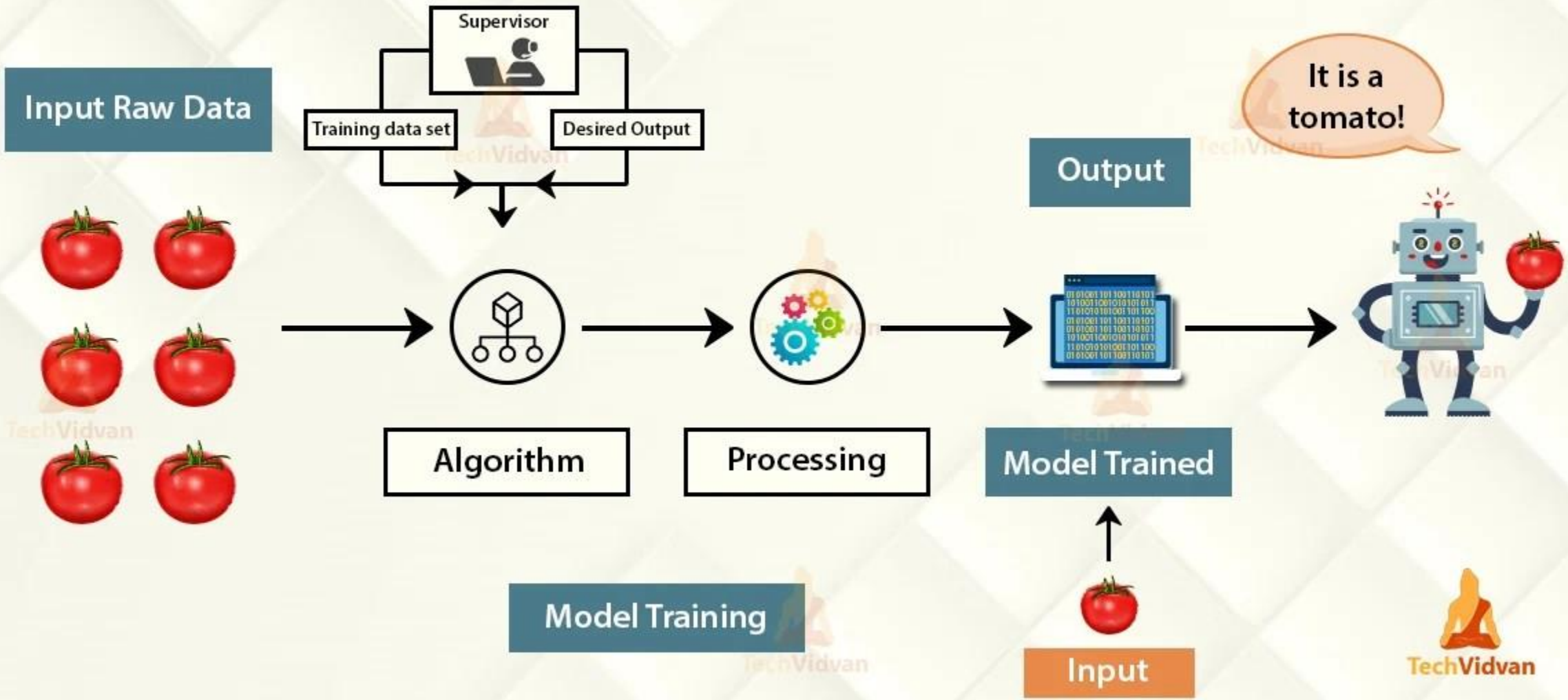
WHY ML

- Machine learning allows the user to feed a computer algorithm an immense amount of data and have the computer analyse and make data-driven recommendations and decisions based on only the input data.

ML IN PROFIT PREDICTION

- Machine learning is widely used in profit prediction for various industries and businesses. By analyzing historical data and identifying patterns and trends, machine learning algorithms can make predictions about future profitability.
- machine learning in profit prediction offers businesses a valuable tool to make informed decisions, optimize resource allocation, and improve financial planning.
- We use supervised ML model in profit prediction

Supervised Learning in ML

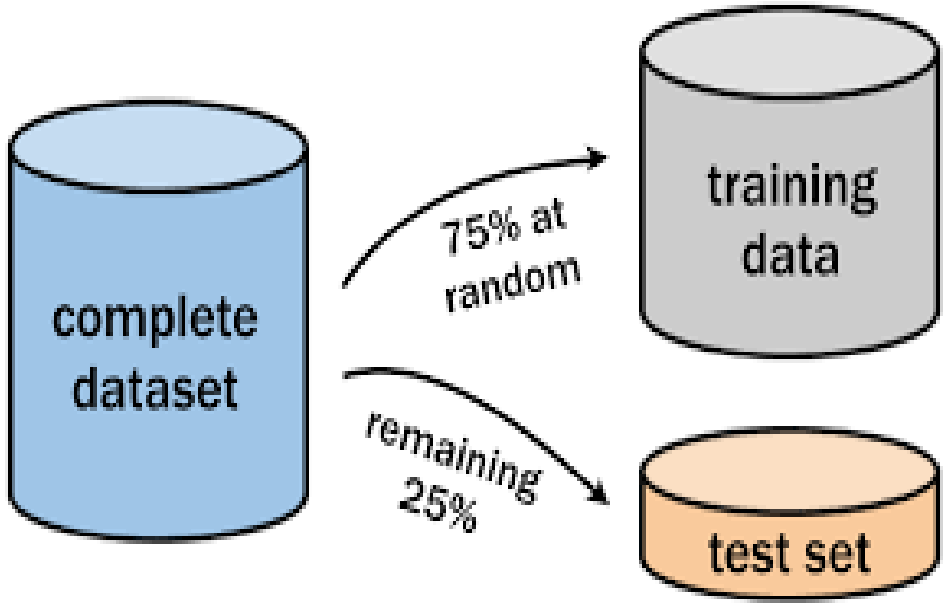


ML MODELS

- In this project I use various machine learning models to predict the profit of 50 start-up companies. Different models predict different profit values based on their efficiency.
- We use supervised machine learning to predict profit.
- The names of the models are linear Regression, support vector Machine, random forest regressor, decision tree Regressor, KNN Algorithm, Lasso regularization, Ridge regularization, Elastic Net Regression.

TRAINING AND TESTING

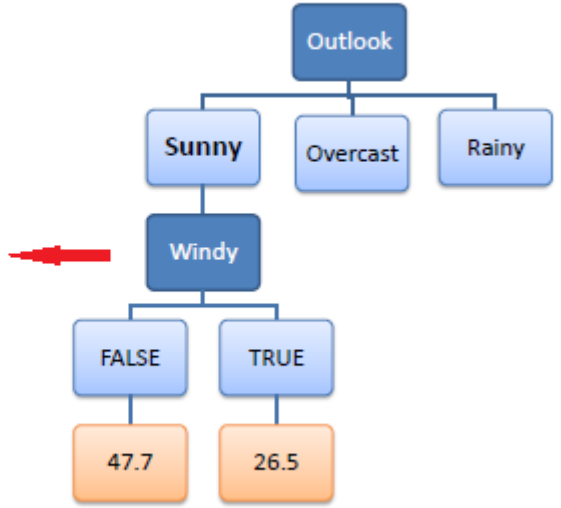
- When using machine learning for profit prediction, it is common to split the available data into training and testing datasets. In this project I allocate around 80% of the data for training and 20% for testing.
- The training data (80% of the total data) is used to train the machine learning model.
- The testing data (20% of the total data) is used to evaluate the performance of the trained model



PERFORMANCE

- By observing the performance of all the machine learning models , decision tree algorithm predict profits with 96% accuracy.

Temp	Humidity	Windy	Hours Played
Mild	High	FALSE	45
Cool	Normal	FALSE	52
Mild	Normal	FALSE	46
Cool	Normal	TRUE	23
Mild	High	TRUE	30



ADVANTAGES

- Accurate Predictions
- Adaptability to Changing Conditions
- Improved Decision-Making
- Identifying Key Factors
- Enhanced Risk Management

CONCLUSION

In conclusion, machine learning models for profit prediction provide businesses with the ability to accurately forecast future profitability by leveraging historical data and identifying patterns and trends. These models offer advantages such as accurate predictions, adaptability to changing conditions, improved decision-making, identification of key factors, automation, scalability, and enhanced risk management.

Thanks!

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