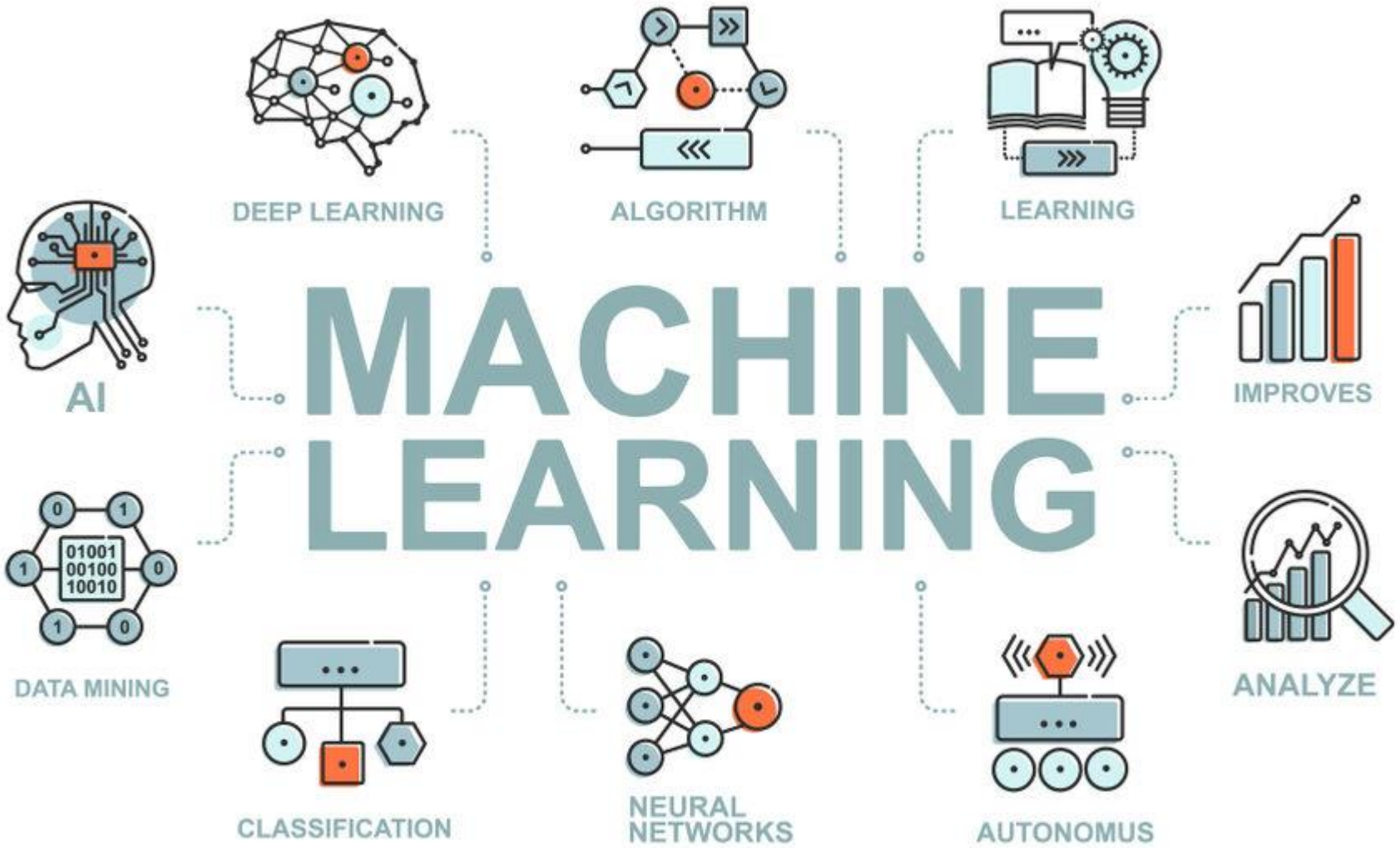
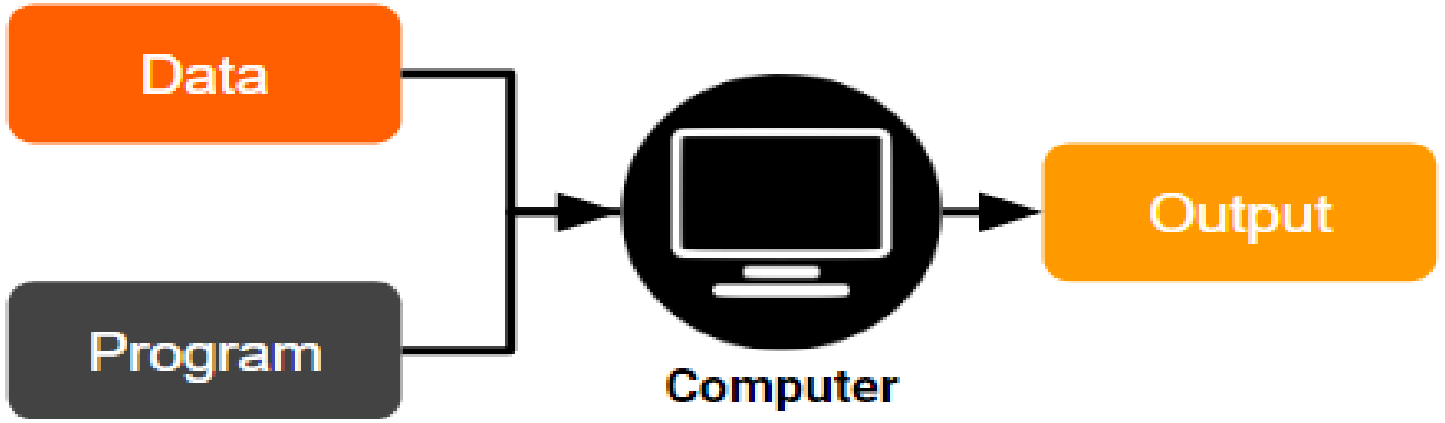

MACHINE LEARNING
AI
DEEP LEARNING
ALGORITHM
LEARNING
IMPROVES
DATA MINING
CLASSIFICATION
NEURAL NETWORKS
AUTONOMUS
ANALYZE
01001
00100
10010

MACHINE LEARNING

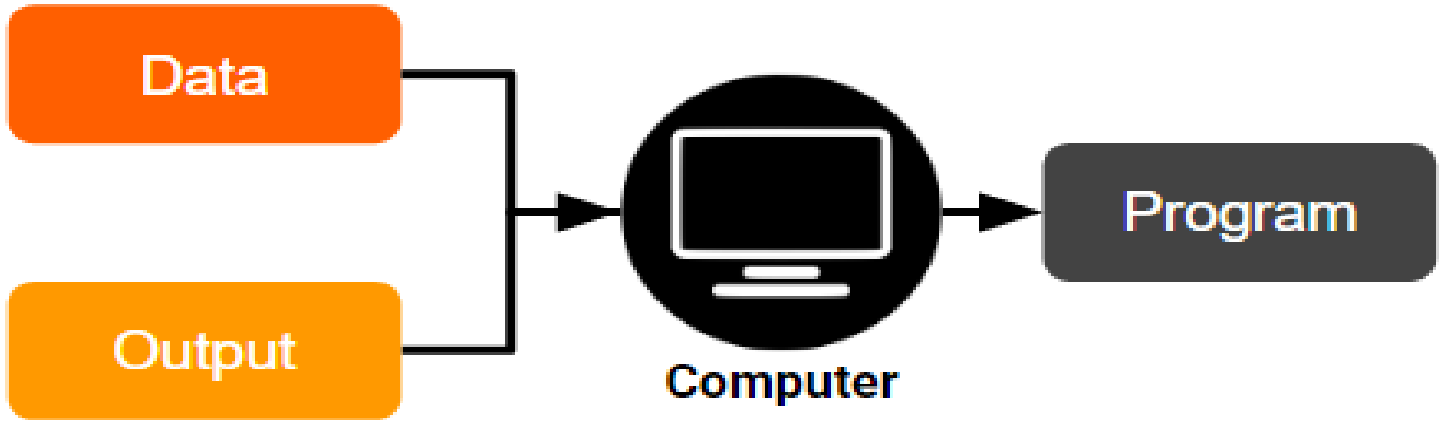
Machine learning (ML) is a discipline of artificial intelligence (AI) that provides machines with the ability to automatically learn from data and past experiences while identifying patterns to make predictions with minimal human intervention.

Machine learning is a method of training a machine to learn from data, rather than being explicitly programmed. It involves feeding a machine a large dataset and allowing it to learn and improve performance over time.

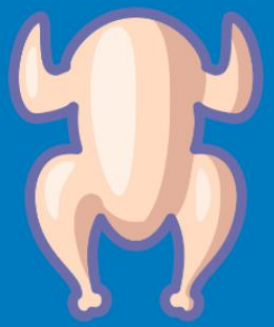
Traditional Programming



Machine Learning



Traditional programming

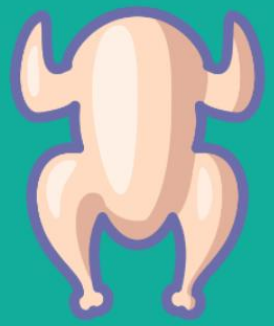


1. Cut vegetables
2. Season chicken
3. Preheat oven
4. Cook chicken for 30-minutes
5. Add vegetables

Starts with → **Makes**

Machine learning algorithm

Inputs



Output

1. Cut vegetables
2. Season chicken
3. Preheat oven
4. Cook chicken for 30-minutes
5. Add vegetables

Starts with → **Figures out**

How machine learning work?

Input Data → Data Preparation → Data Analysis → Model Training → Prediction → Decision-making

TYPES OF MACHINE LEARNING

Supervised Machine Learning

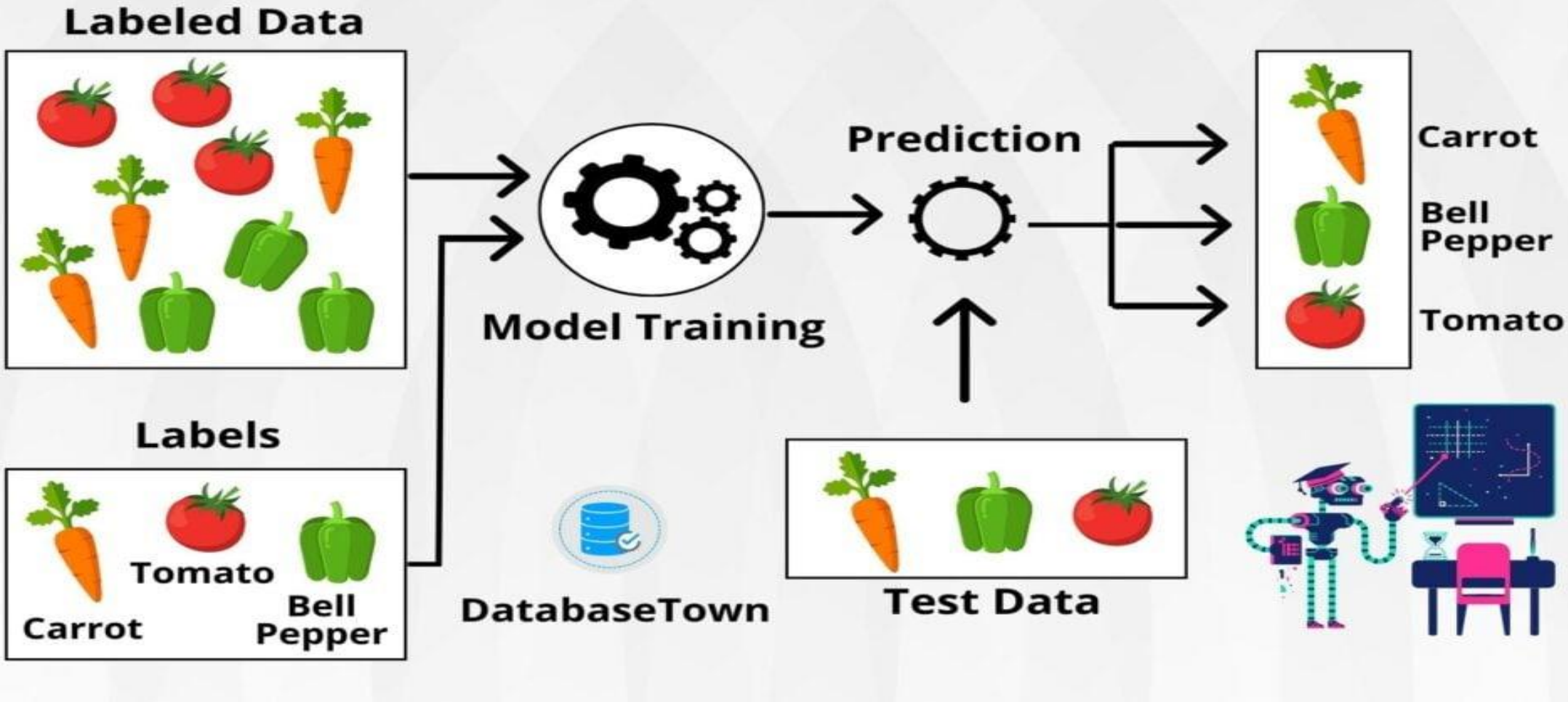
Unsupervised Machine Learning

Semi-Supervised Learning

Reinforcement Learning

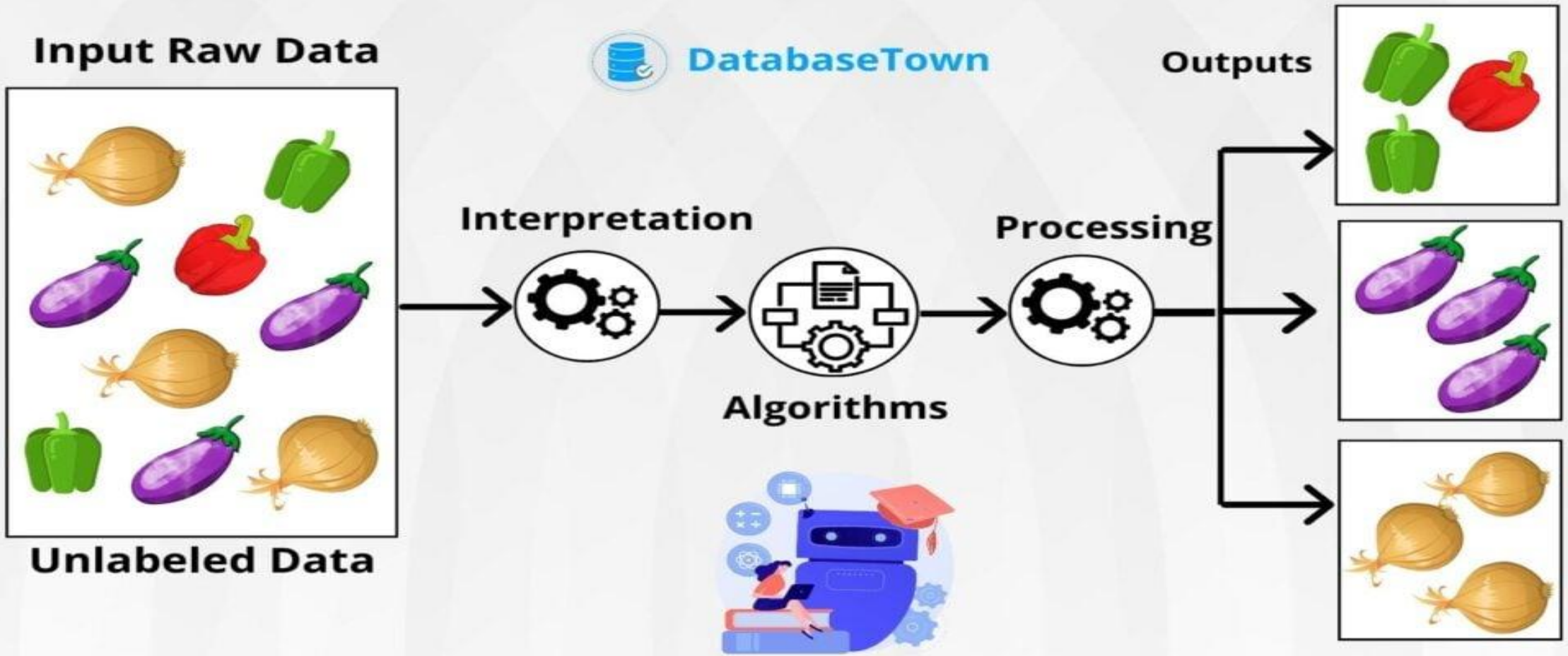
SUPERVISED LEARNING

Supervised machine learning is a branch of artificial intelligence that focuses on training models to make predictions or decisions based on labeled training data.

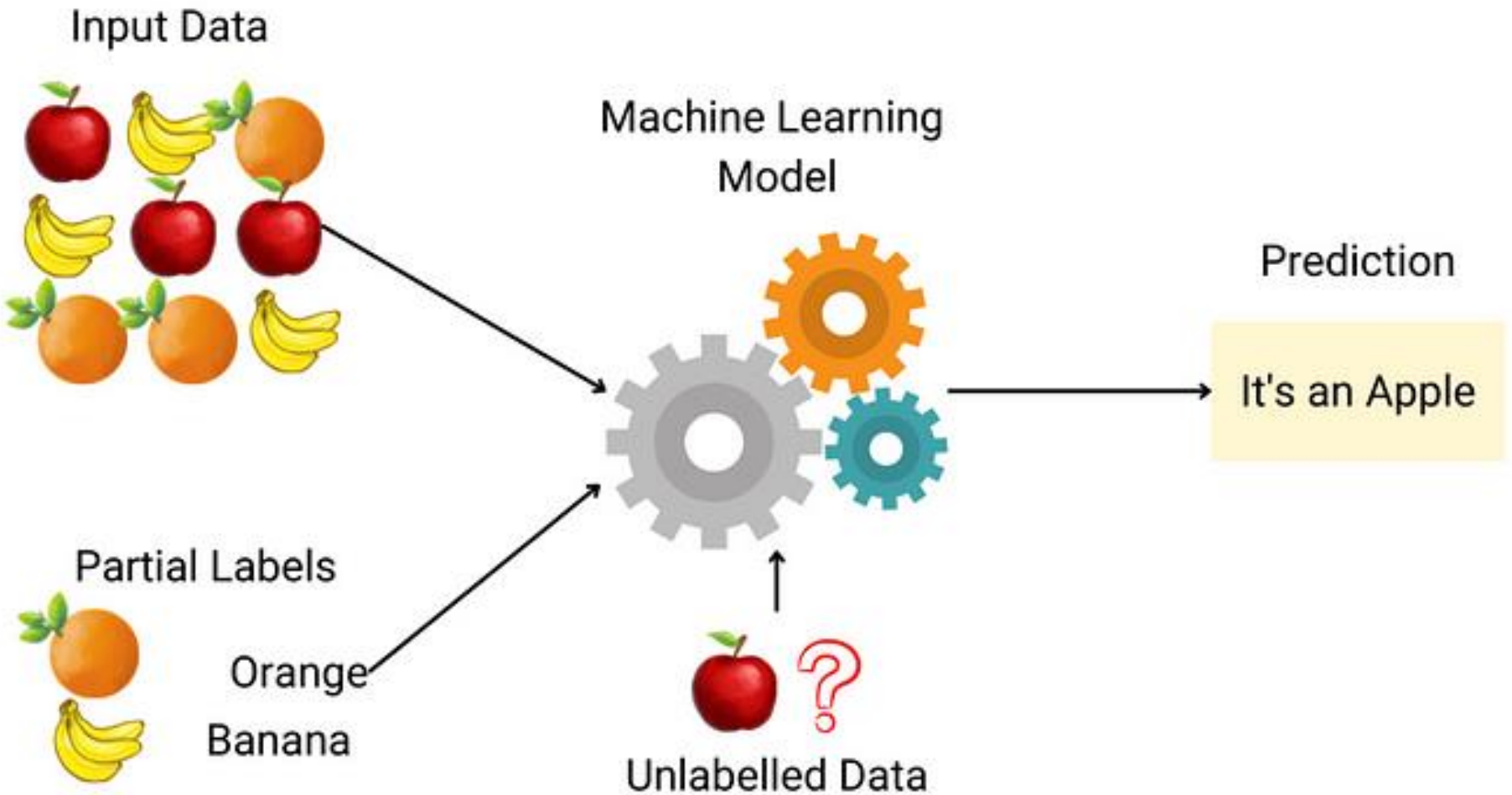


UNSUPERVISED LEARNING

Unsupervised learning is a type of machine learning where the algorithm learns from unlabeled data without any predefined outputs or target variables.



Semi Supervised Learning



REINFORCEMENT LEARNING

Reinforcement learning is a machine learning paradigm that focuses on how agents learn to interact with an environment to maximize cumulative rewards.

DatabaseTown

Baby (Agent)

Sitting

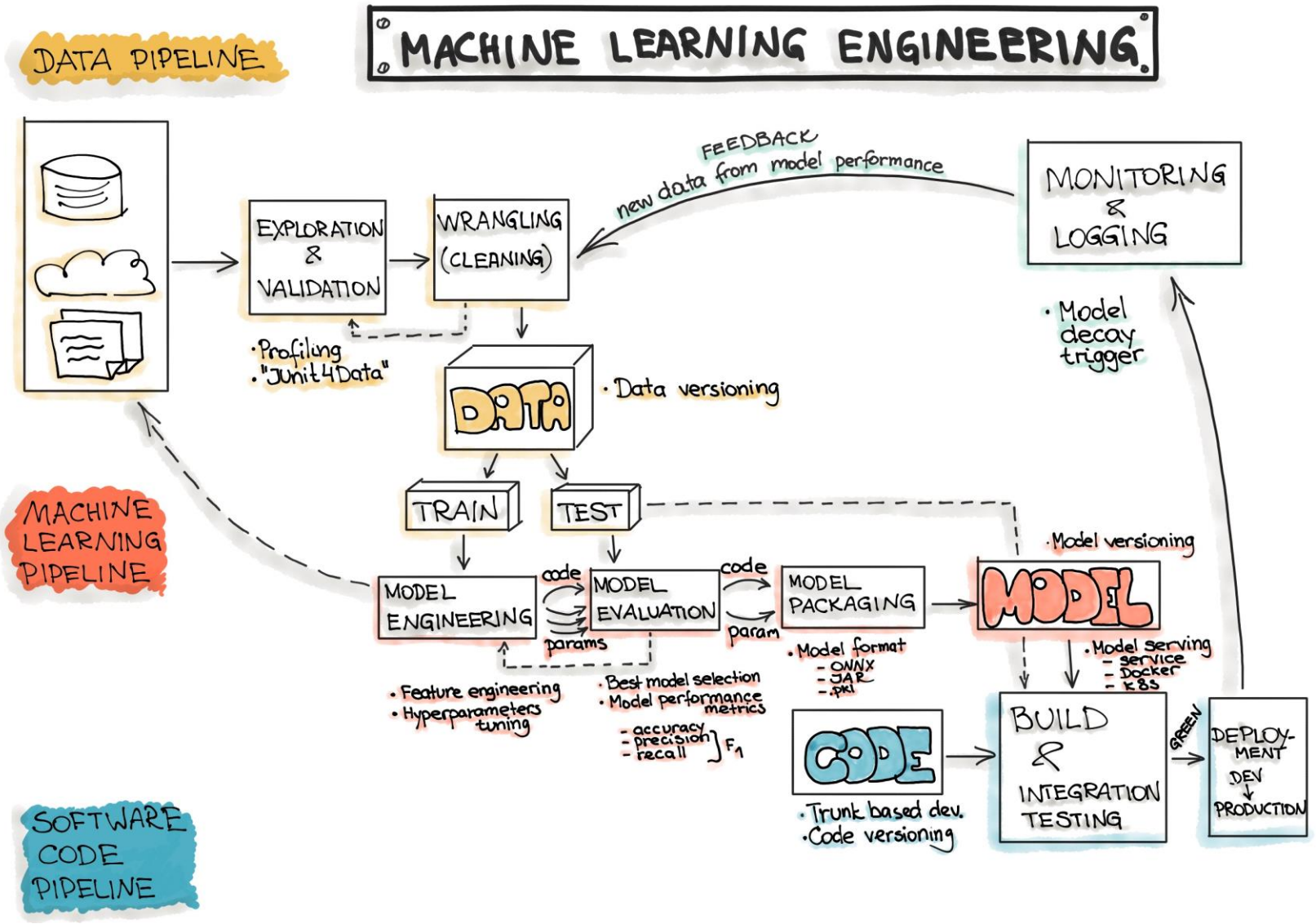
State (Action)

Crawling

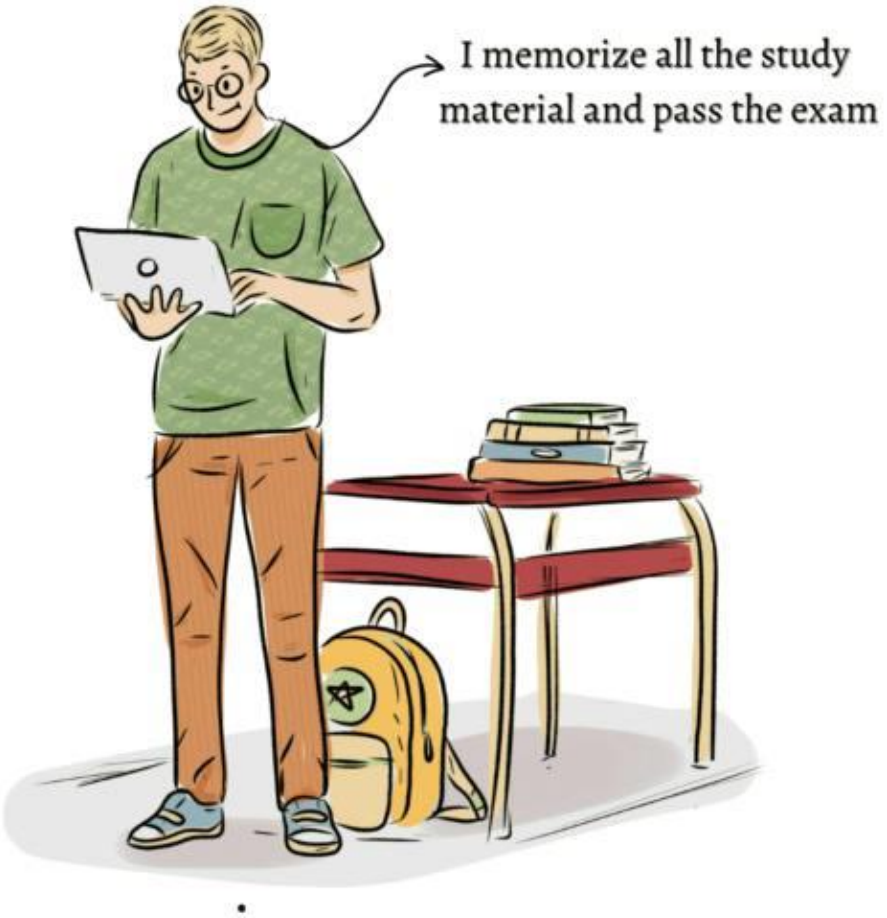
Reward

Feeder

ML Model Building to Deployment | Steps A Z



Underfitting & Overfitting



This story starts with one **‘Student’**  studying for an exam💯.

•**Underfitting happens** — When a student doesn’t study enough so fails to the exam.😢

•**Overfitting happens** — The same student this time memorizes the study material without understanding the concept. And this time he pass the exam but, when a teacher asked outside of the exam paper this student don’t have answers because he memorize the answers in the studying material not understand the concept.

Note🔥:

•If the model is doing very well on the training dataset but poorly on the validation set, it means **‘Overfitting’**. Here is the example remember,if the training error is 1% and ‘validaton_error’ 10%…

•Or the same thing the opposite model performs badly on the training set it’s called **‘Underfitting’**. For example if the train_error is 24% and val_error is 25%