Hands-on Machine Learning with Real-life Application From Scratch

Learn different techniques on how to put AI In your real-life work.

Presented By,

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About Me

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Workshop Contents

- Why we are interested in Machine Learning
- Introduction of Machine Learning
- How to get started Machine Learning
- Types of Machine Learning
- Datasets Collection
- Datasets Preprocessing
- Machine Learning Algorithms
- Environment Setup
- Code & Application
- Conclusion

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Why we are interested in Machine Learning?

- Future Prediction
- Get insight out of the super messy data
- And lots more

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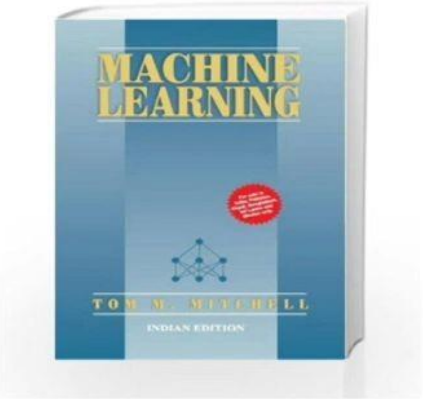
Introduction of Machine Learning

Hard Introduction



Tom Mitchell

"A computer program is said to learn from experience E with respect to some class of tasks T and performance measure P, if its performance at tasks in T, as measured by P, improves with experience E."

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Introduction of Machine Learning

Easy Introduction

Andrew Ng

“ It is a technique for programs which you can not code ”

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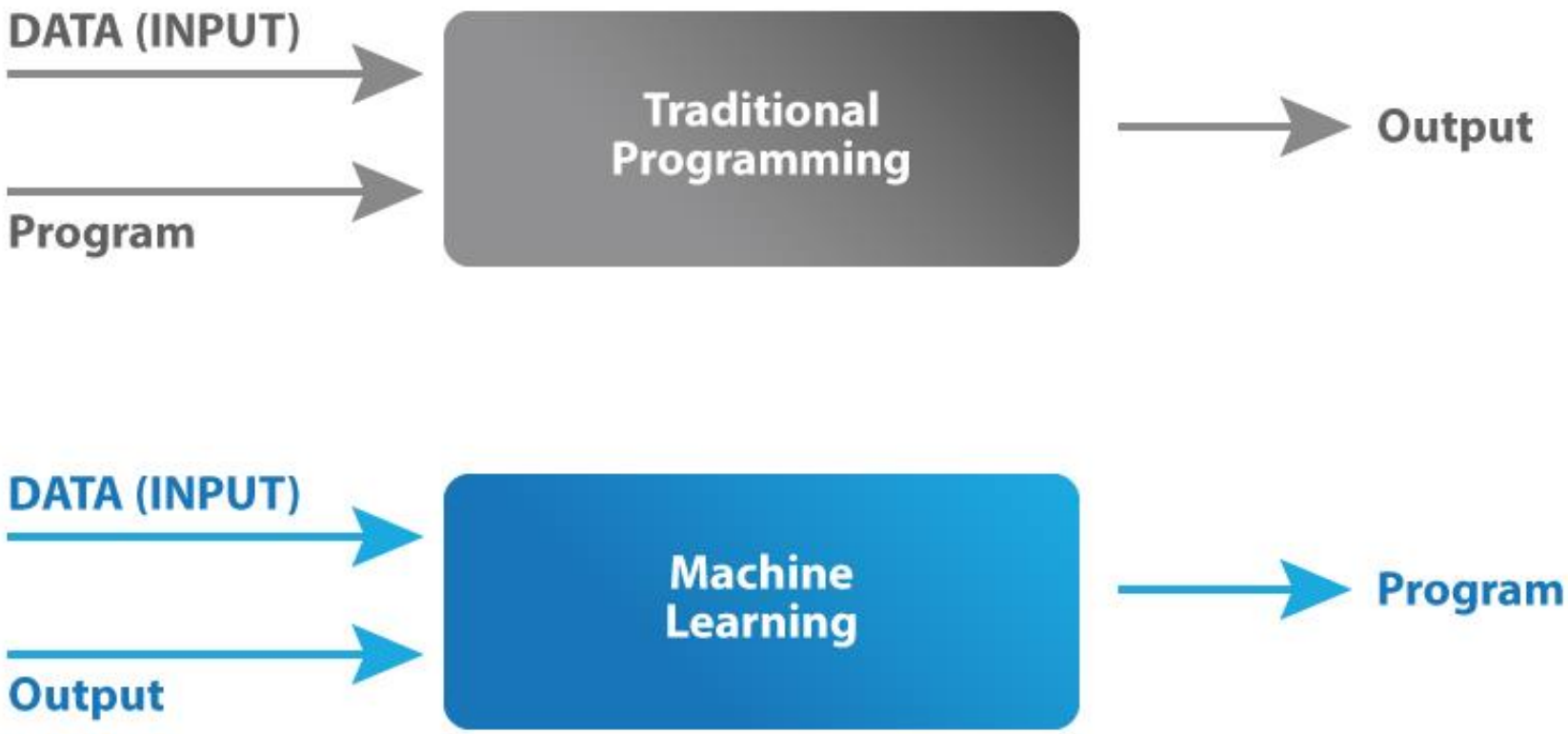
Introduction of Machine Learning



How to get started Machine Learning

Mathematics

- Linear Algebra
- Calculus
- Statistics
- Probability

Python & Machine Learning Packages

- Basic Python
- Pandas
- NumPy
- Matplotlib
- Scikit-learn

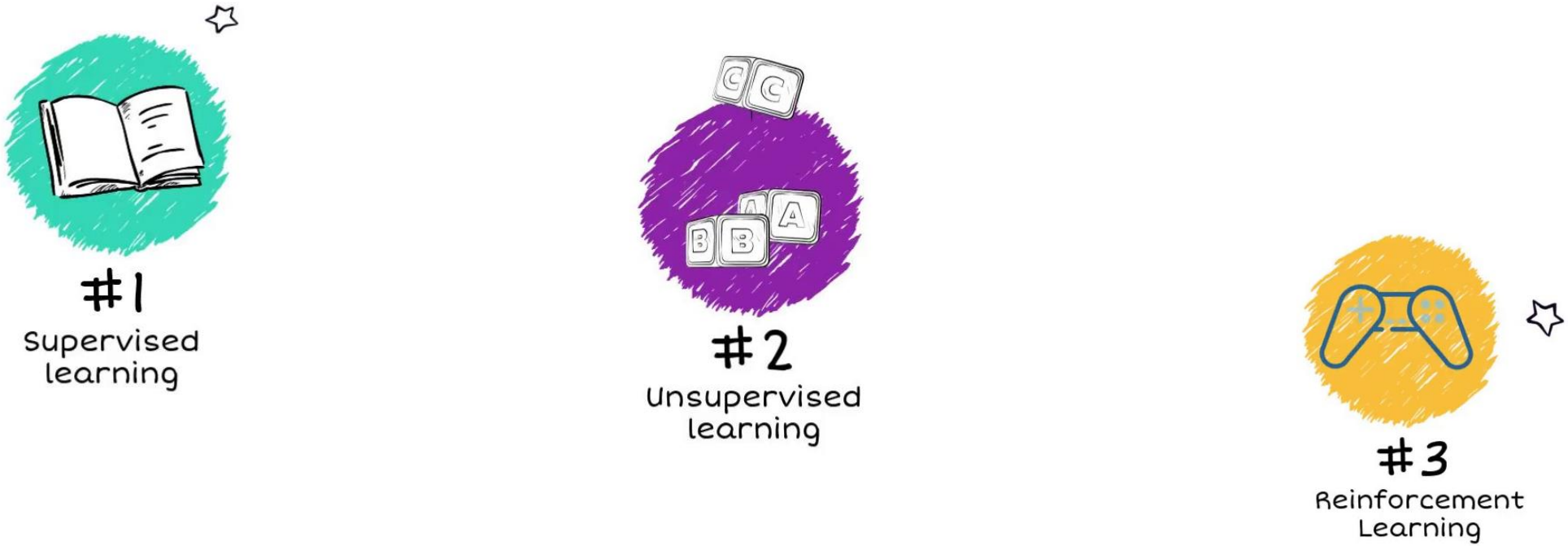
Machine Learning Algorithms

- Supervised algorithms
- Unsupervised algorithms

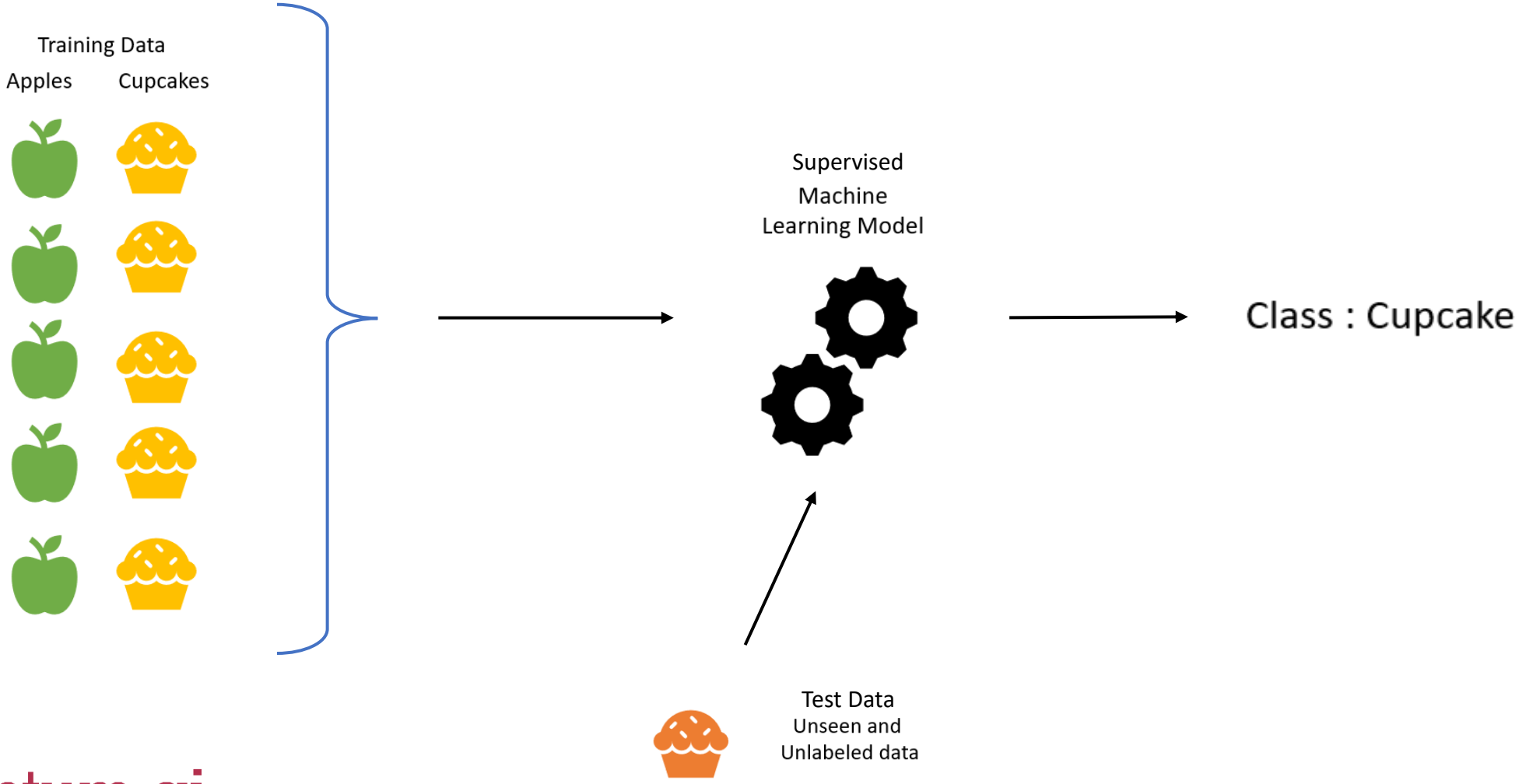
Dataset and Practical

- UCI Machine Learning Repository
- Kaggle
- Google Dataset

Types of Machine Learning



Supervised Learning



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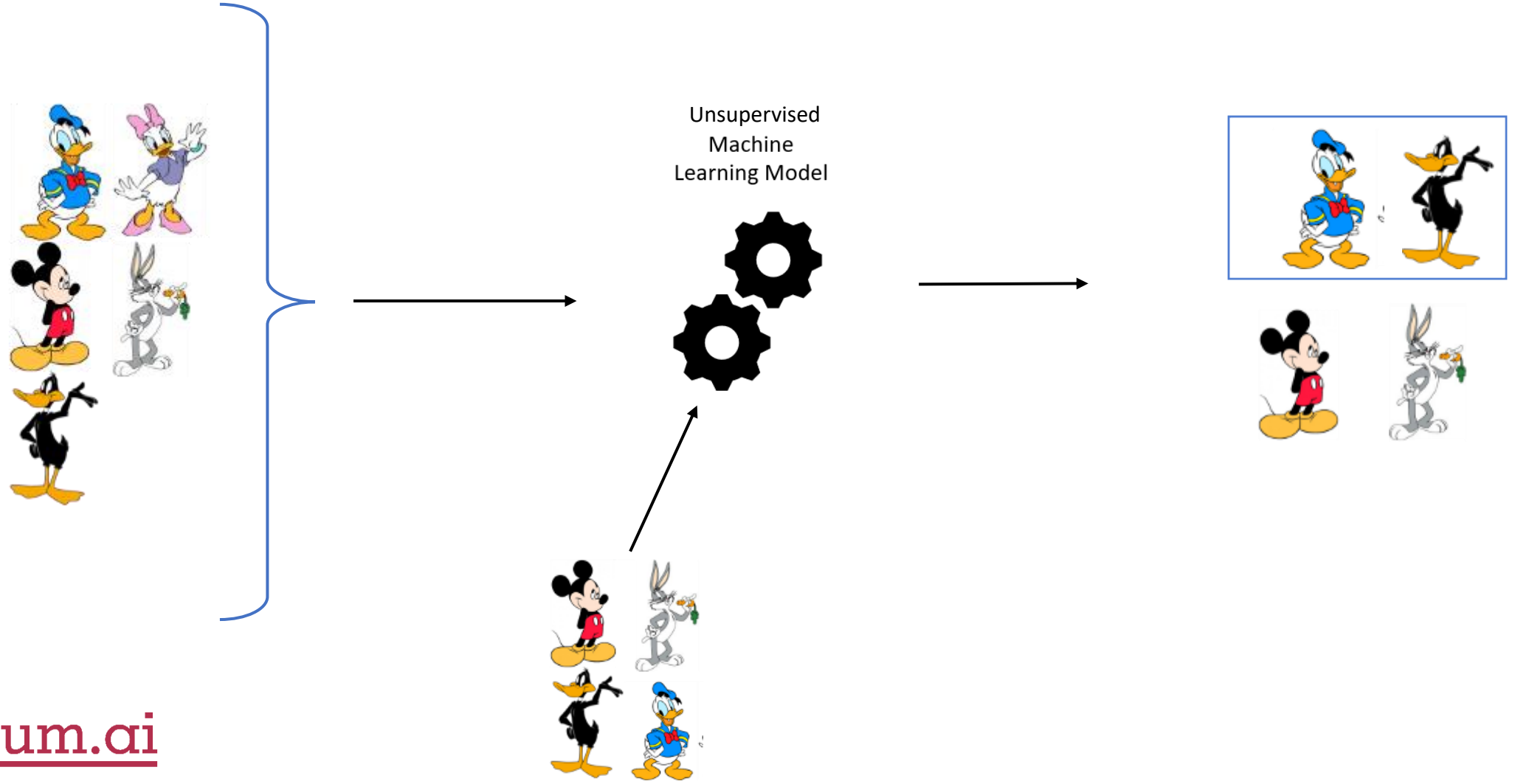
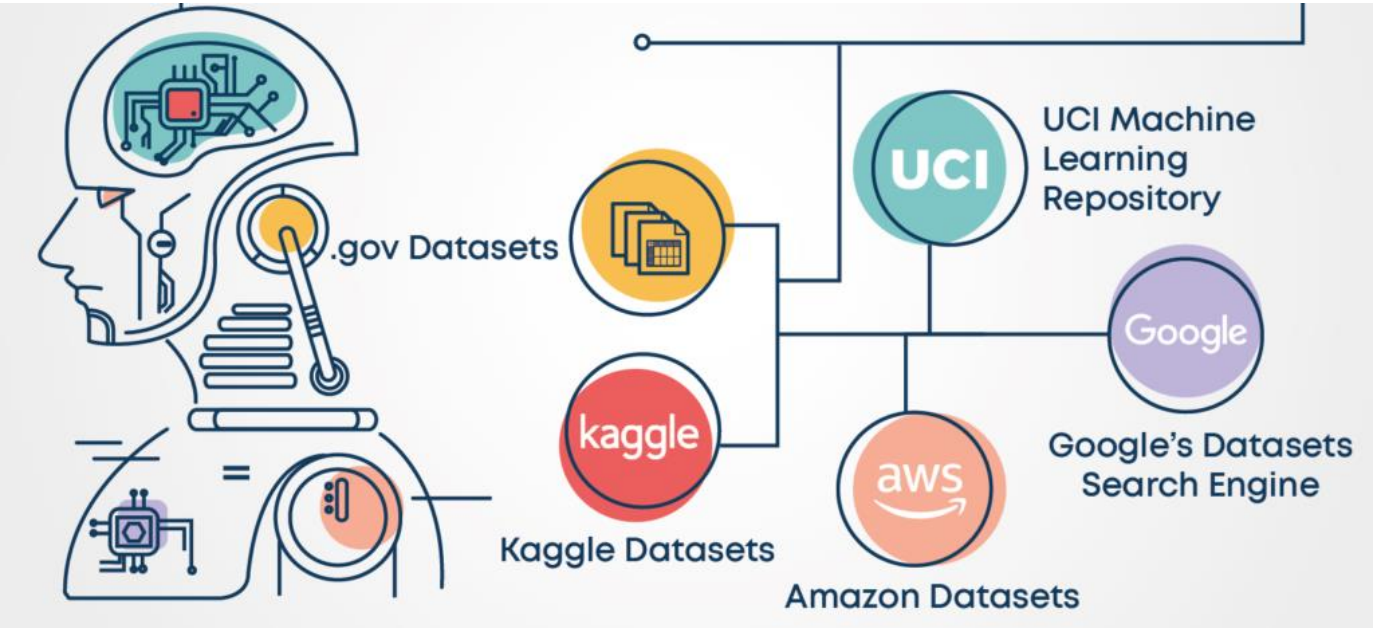
Unsupervised Learning



Data Collection

- Open Sources
- Web Scraping
- Online Survey
- And lots more ways



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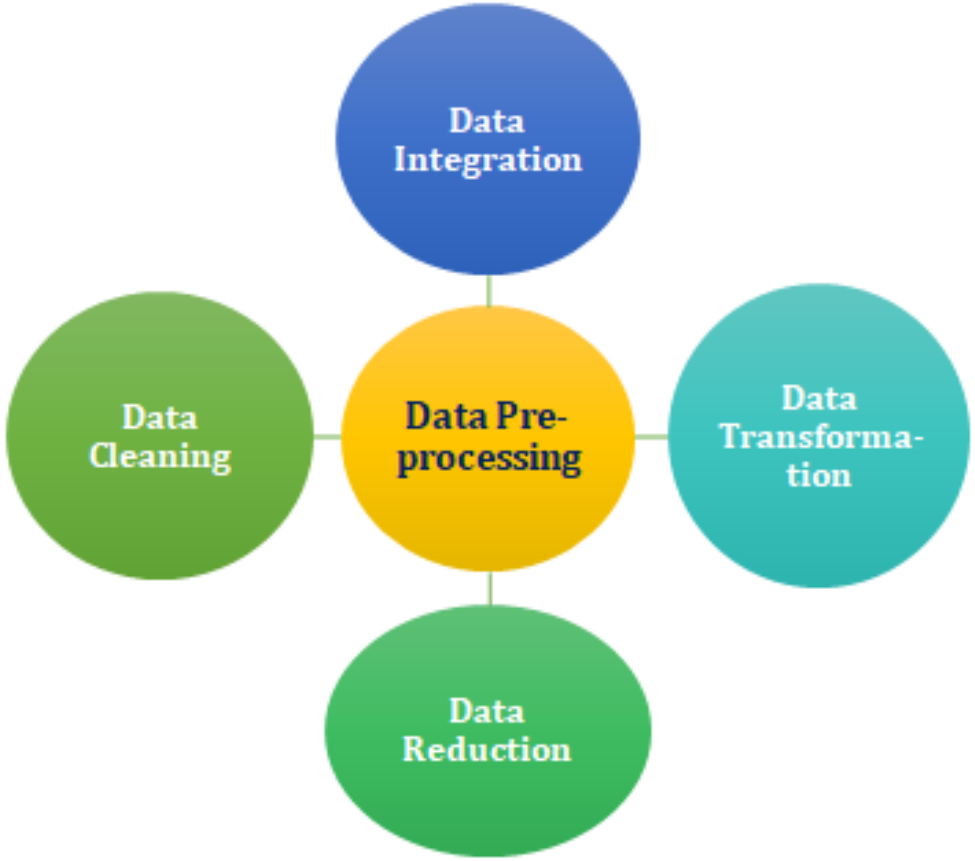
Data Preprocessing

- Data Cleaning
- Data Integration
- Data Transformation
- Data Reduction



Machine Learning Algorithms

	Supervised	Unsupervised
Continuous	Regression Linear Polynomial Decision Trees Random Forests Nerual Networks	Clustering & Dimensionality Reduction SVD PCA K-Means
Categorical	Classification KNN Trees Logistic Regression Naive-Bayes SVN Nerual Networks	Association Analysis Apriori FP-Growth Hidden Markov Model

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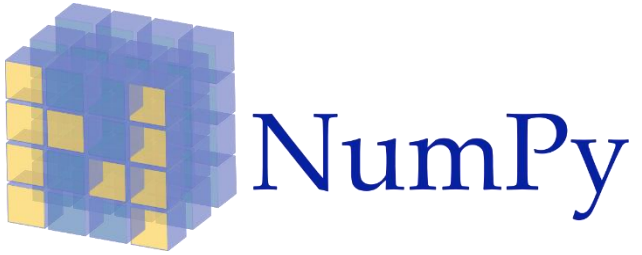
Environment Setup

- Anaconda
- Pandas
- NumPy
- Matplotlib
- Scikit-learn
- VS Code



Code & Application

Species Predictor

ABOUT DATASET | VIEW DATASET

Select Attributes

Sepal Length

Sepal Width

Petal Length

Petal Width

Logistic Regression

Predict *Clear*

Input Data

Sepal Length: 6.8

Sepal Width: 3.9

Petal Length: 4.8

Petal Width: 1.9

Using knnmodel on [6.8, 3.9, 4.8, 1.9]

Prediction

Predicted result ['versicolor']

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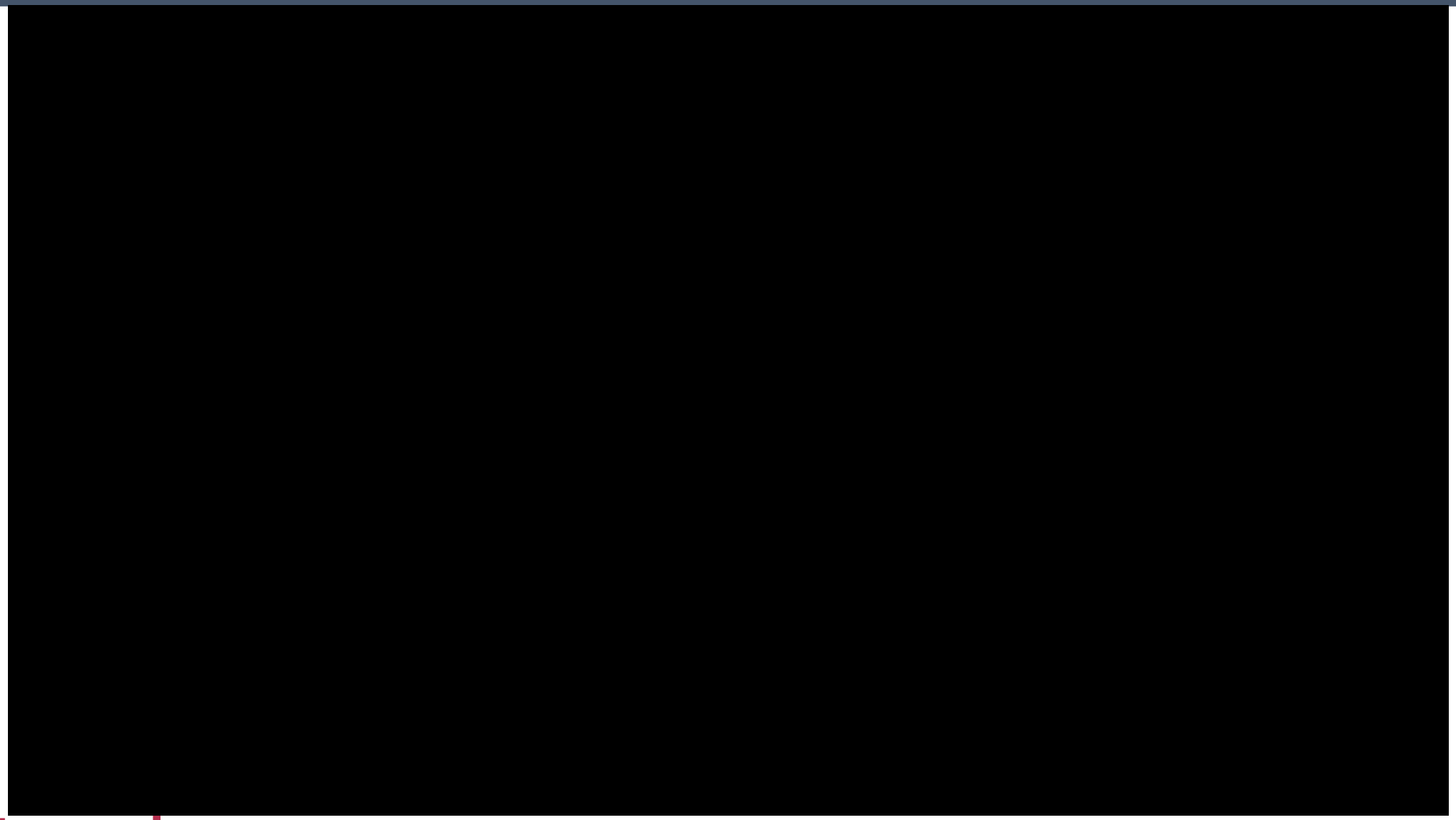
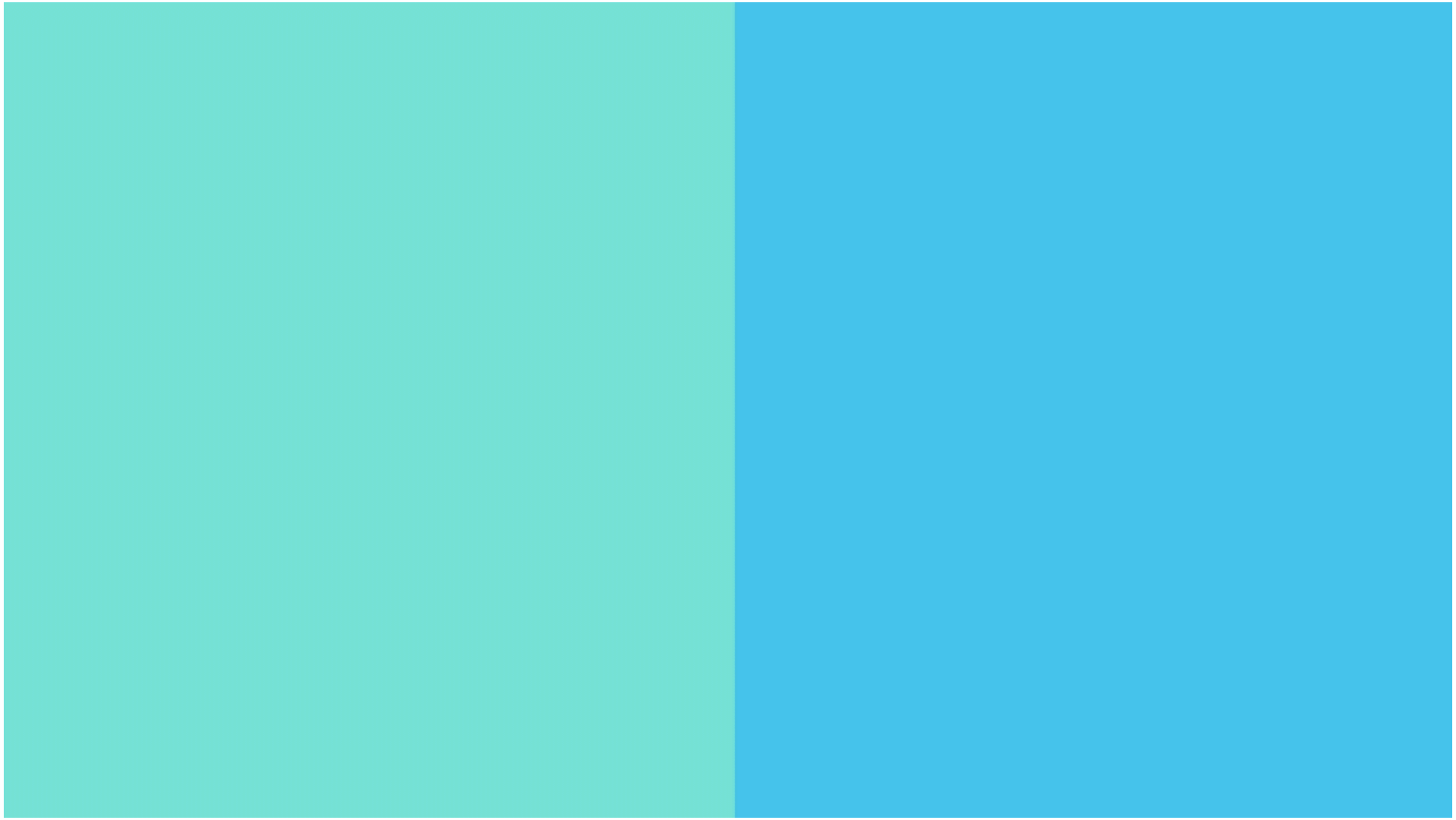
Logistic Regression



Decision Trees



Conclusion

What we learned today?

- Why choose ML
- What is ML
- Type of ML
- Data Collection
- Data Preprocessing
- ML Algorithms
- Code & Application

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Congratulations!

Thanks for joining workshop

Workshop repository link:
https://github.com/harunurrashid97/Machine_learning_Workshop_2021

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