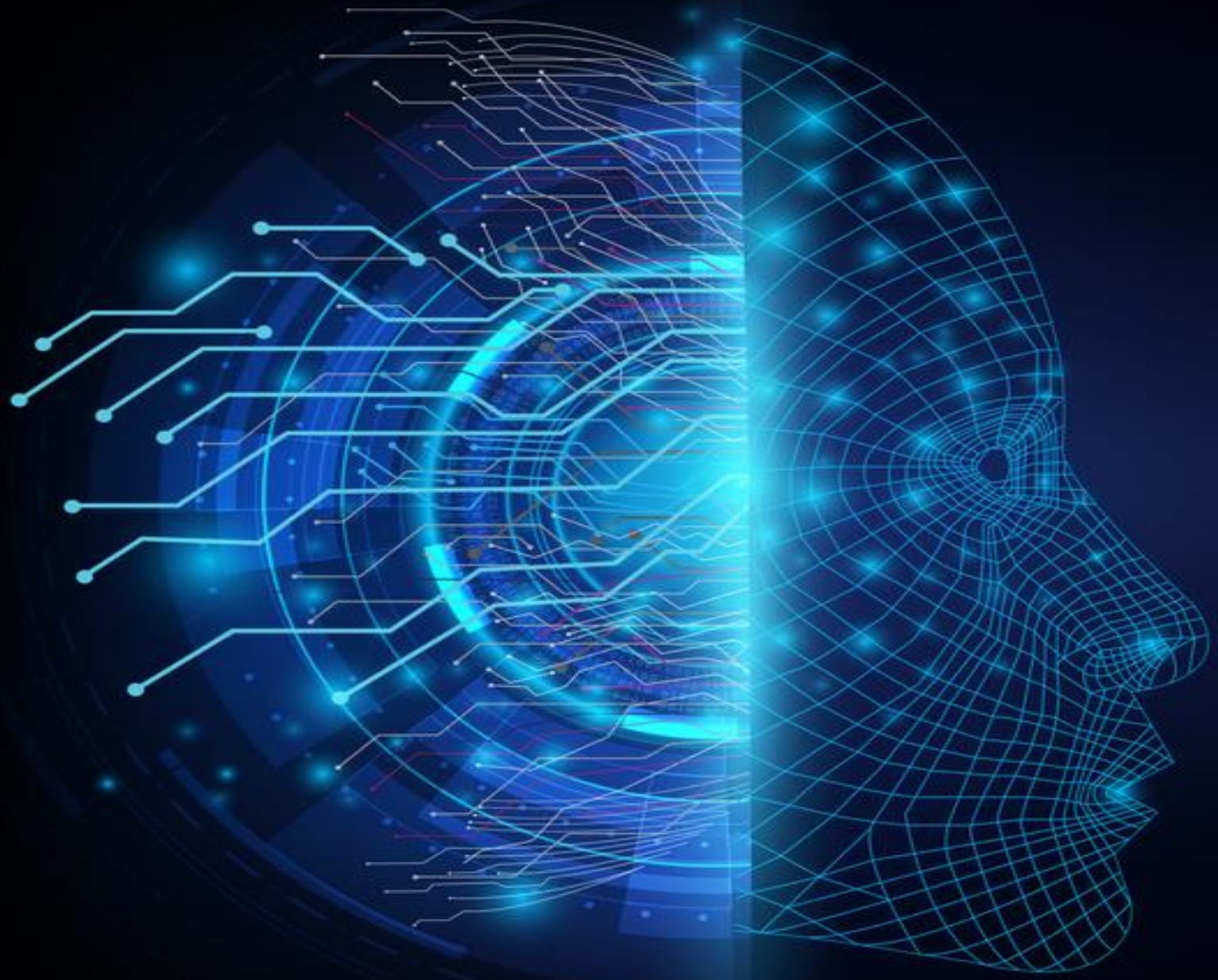

Machine Learning

Henrique Padovani


Who
am I?

< ENG. PHYSICS @ UFRGS >

< ROTATION INTERN @ SAP >


20
21

< SAP >

< ROTATION PROGRAM >

< INTERVIEW TIPS & TRICKS >

< MACHINE LEARNING >

< SAP >

< ROTATION PROGRAM >

< INTERVIEW TIPS & TRICKS >

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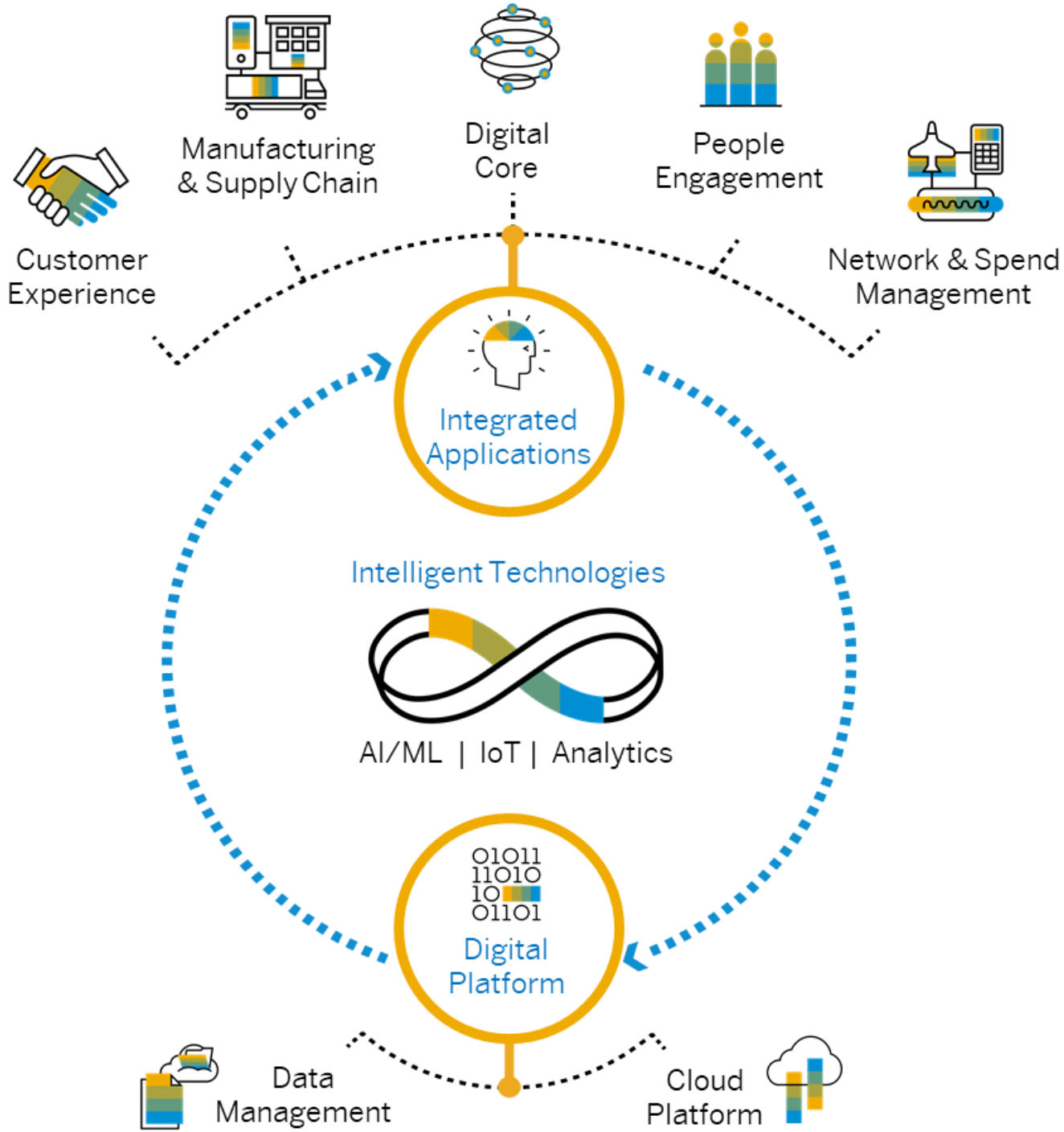
SAP


FINANCE
& CONTROLLING
HUMAN
RESOURCES
SALES
& CRM
ERP
MAINTENANCE
PURCHASE
WAREHOUSE
MANAGEMENT
PRODUCTION
& QUALITY


Manufacturing & Supply Chain
Digital Core
People Engagement
Customer Experience
Network & Spend Management
Integrated Applications
Intelligent Technologies
AI/ML | IoT | Analytics
01011
11010
10
01101
Digital Platform
Data Management
Cloud Platform

437,000

Customers in more than 180 countries

98,000+

Employees from 140+ countries

18,000+

SAP partner companies globally

24.74b €

Total Revenue (Non-IFRS) in FY2018

186 mil.

Subscribers in our cloud user base

100+

Innovation and development centers

< SAP > 

< ROTATION PROGRAM >

< INTERVIEW TIPS & TRICKS >

< MACHINE LEARNING >

ROTATION PROGRAM 2020

< 2 years >

< Three different areas – 8 month each >

< 32 Interns >

< Software Development - Technical Support - Business Support - Consulting >

< March 2020 >

< DEVELOPMENT >

< SUPPORT >

< MARKETING >

< HUMAN RESOURCES >

< EVENTS >

< CLIENTS >

< P.O.C. & PROTOTYPES >


SAÍDA

< SAP > 

< ROTATION PROGRAM > 

< INTERVIEW TIPS & TRICKS >

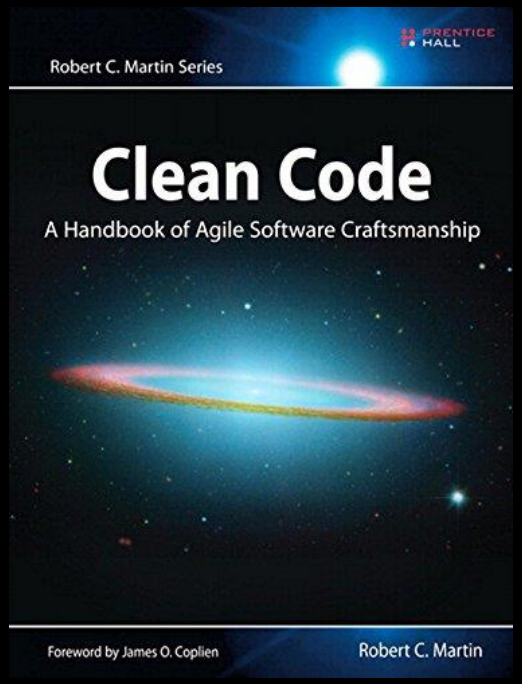
< MACHINE LEARNING >

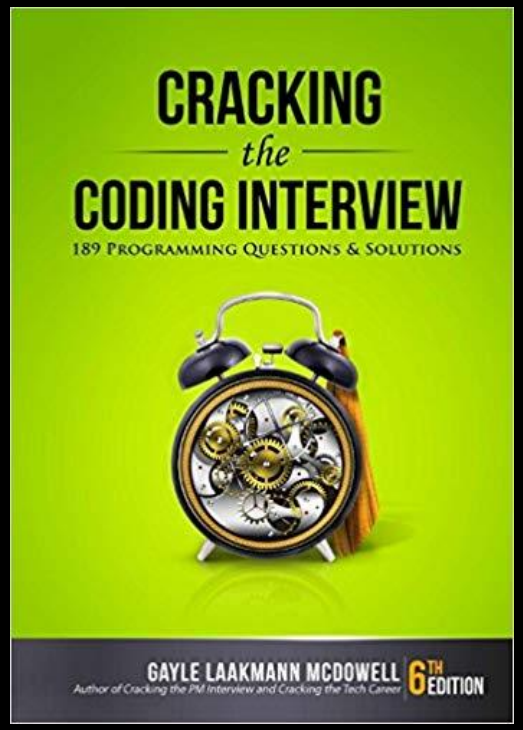
DICAS DE ENTREVISTA DE PROGRAMAÇÃO

- **Lógica de programação**
- **Orientação a objetos:** Encapsulamento, herança, polimorfismo, interface. (Java)
- **Estrutura de dados:** Lista Encadeada, Fila, Pilha, Árvore, Grafo.
- **Complexidade de tempo e de espaço.**
- **Desafios de programação. (Python)**
- **Banco de dados**

LIVROS

- Clean code
- Cracking the Coding Interview





FONTES DE APRENDIZADO GRATUITO E DE BAIXO CUSTO

Youtube

Udemy

TED

Endeavor

Khan Academy

Udacity

EDX

Data Science Academy

Code Academy

Coursera

< SAP > 

< ROTATION PROGRAM > 

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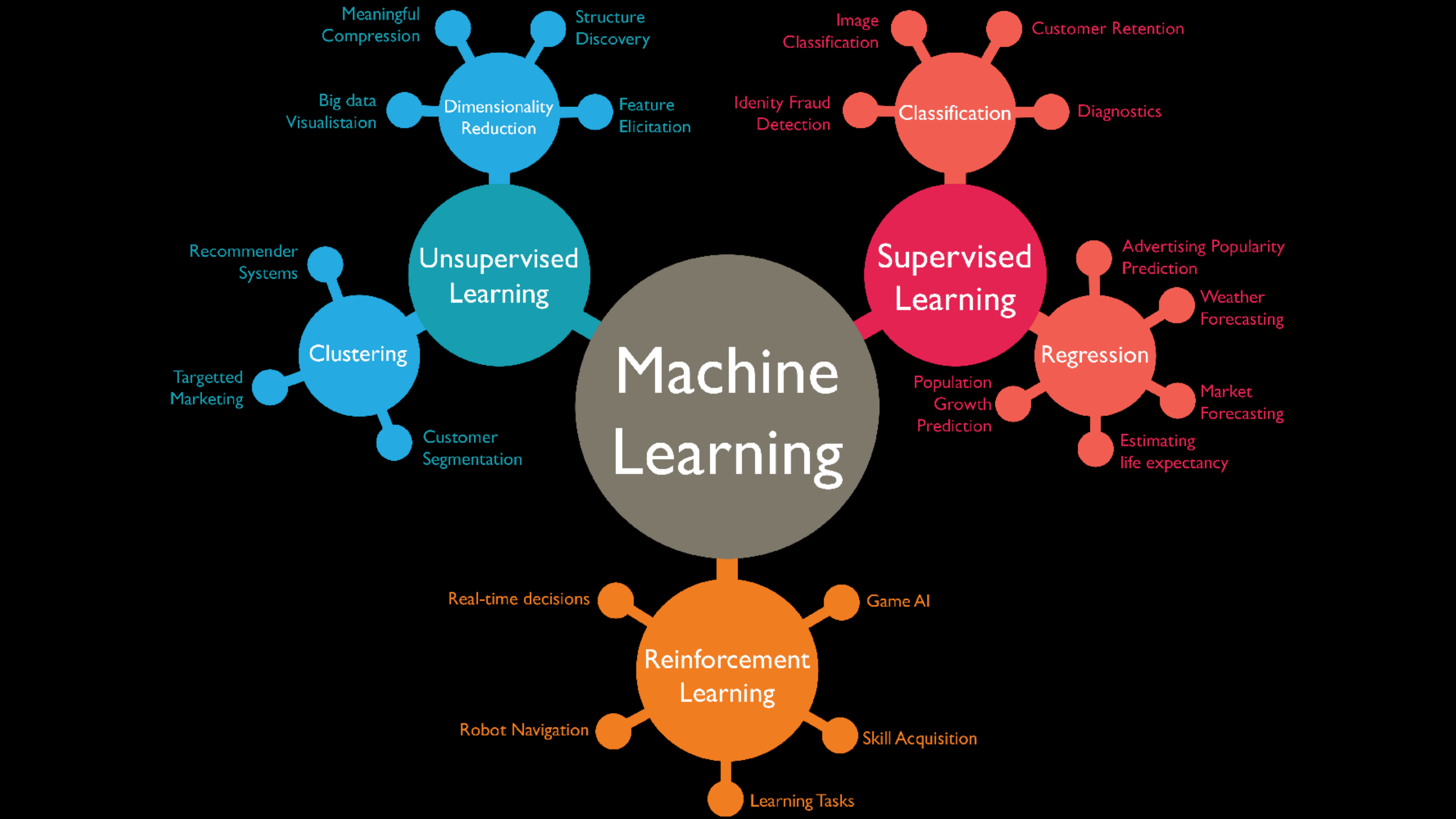
< MACHINE LEARNING >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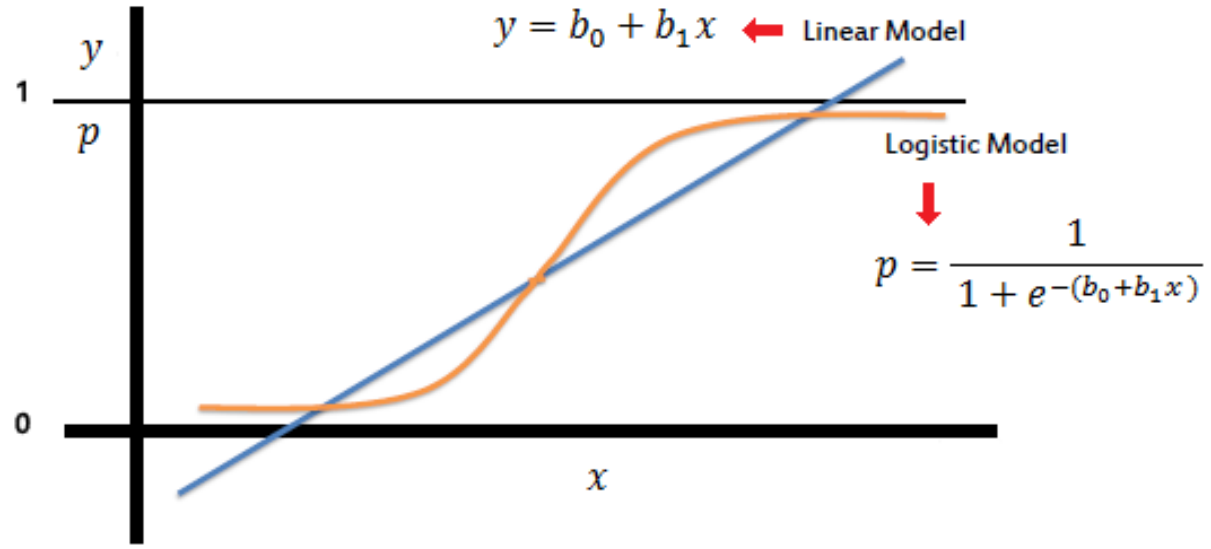
Unsupervised Learning
Dimensionality Reduction
Meaningful Compression
Structure Discovery
Big data Visualistaion
Feature Elicitation
Clustering
Recommender Systems
Targetted Marketing
Customer Segmentation
Supervised Learning
Classification
Image Classification
Customer Retention
Idenity Fraud Detection
Diagnostics
Regression
Advertising Popularity Prediction
Weather Forecasting
Population Growth Prediction
Market Forecasting
Estimating life expectancy
Reinforcement Learning
Real-time decisions
Game AI
Robot Navigation
Skill Acquisition
Learning Tasks

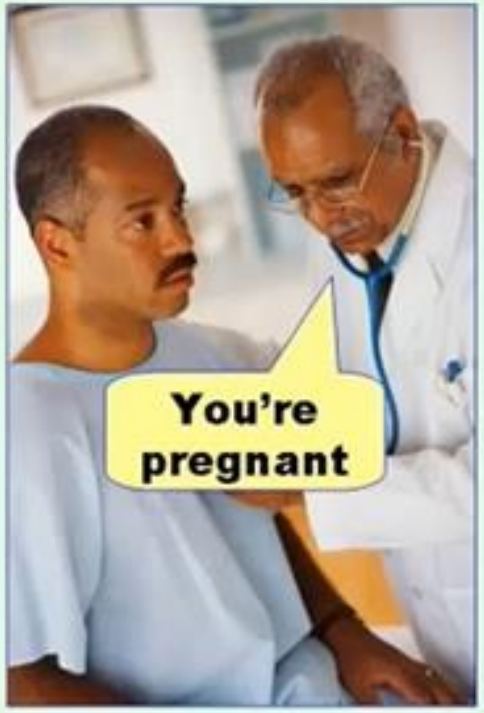
CLASSIFICATION

LOGISTIC REGRESSION

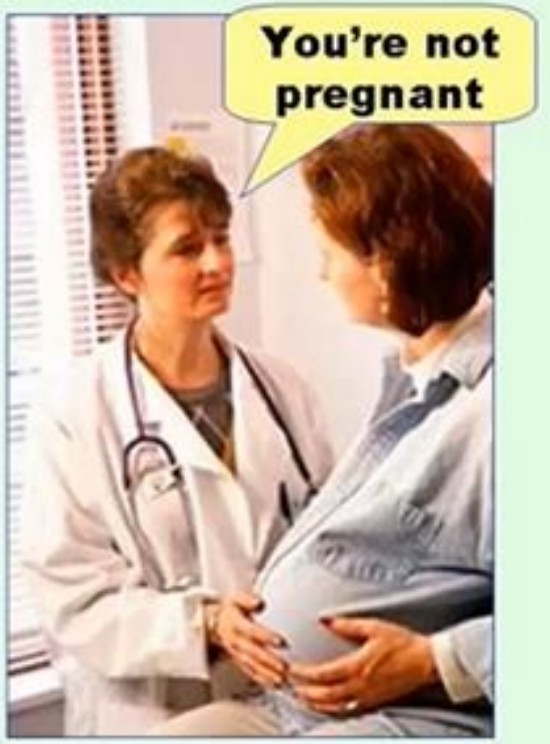
- 0 or 1
- Yes or No
- Spam e-mail or not
- Disease Diagnosis



Type I error
(false positive)



Type II error
(false negative)



CONFUSION MATRIX

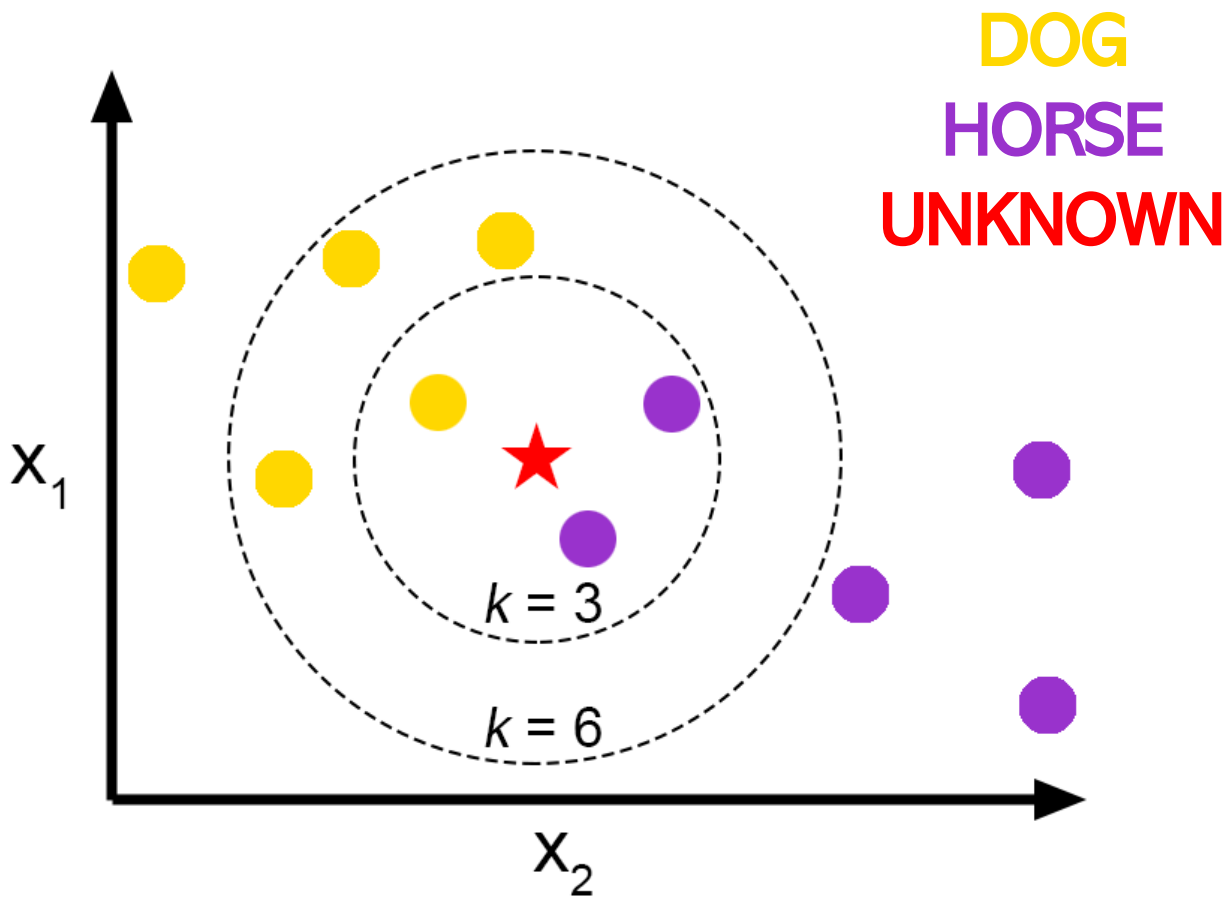
n=165	**Predicted: NO**	**Predicted: YES**
Actual: NO	50	10
Actual: YES	5	100

CONFUSION MATRIX

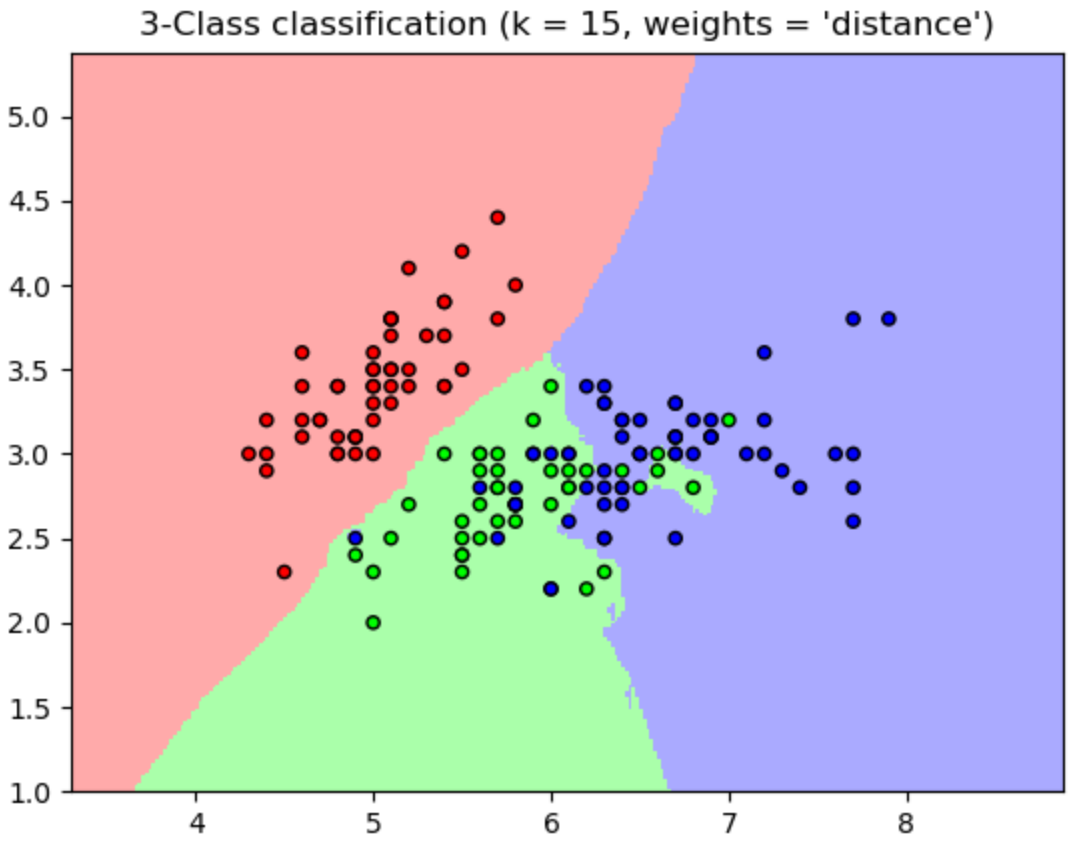
n=165	Predicted: NO	Predicted: YES
Actual: NO	50	10
Actual: YES	5	100

n=165	Predicted: NO	Predicted: YES	
Actual: NO	TN = 50	FP = 10	60
Actual: YES	FN = 5	TP = 100	105
	55	110	

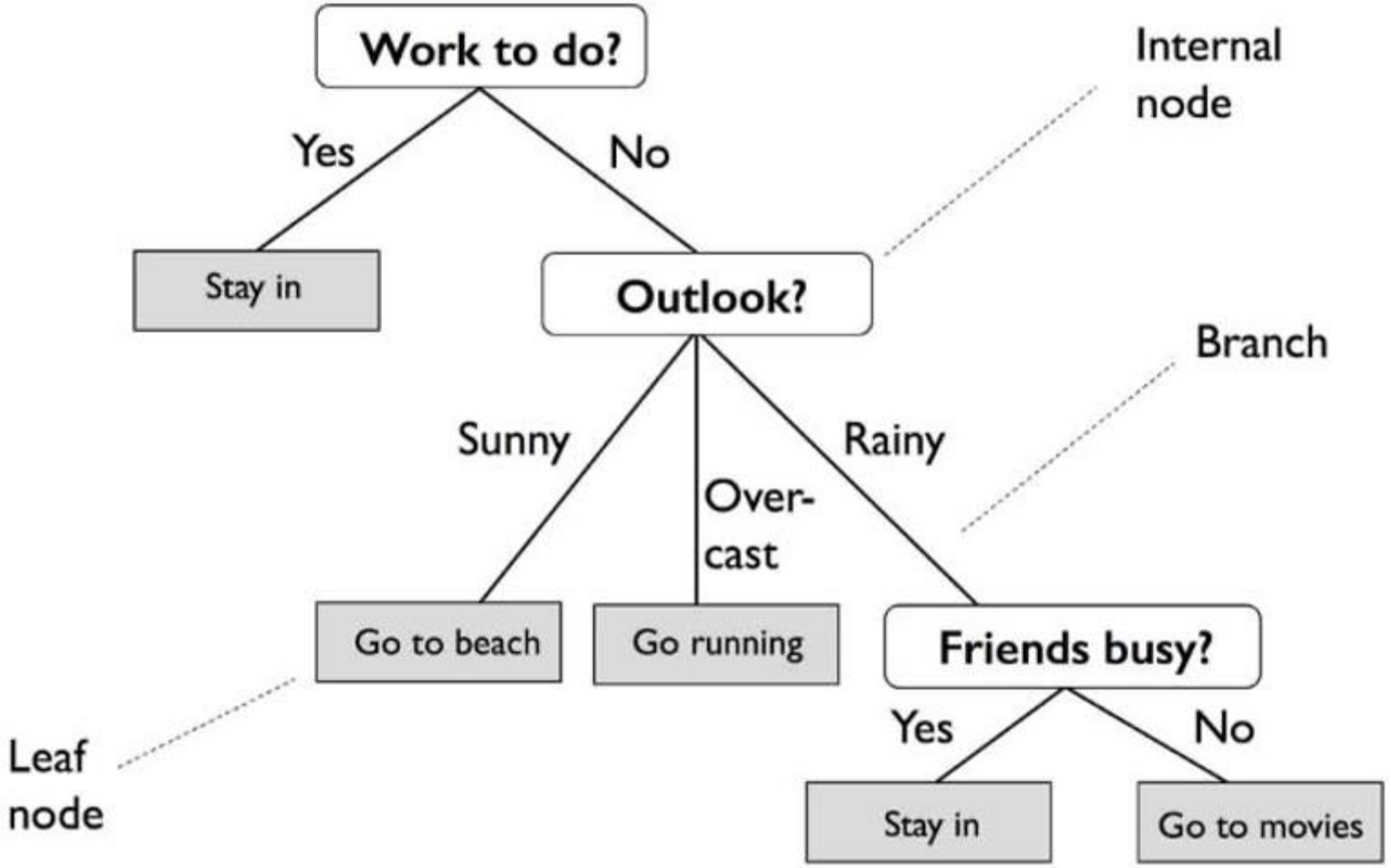
KNN - K NEAREST NEIGHBOR



KNN - K NEAREST NEIGHBOR



DECISION TREES & RANDOM FOREST



DECISION TREES & RANDOM FOREST

Temperature	Outlook	Humidity	Windy	Played?
Mild	Sunny	80	No	Yes
Hot	Sunny	75	Yes	**No**
Hot	Overcast	77	No	Yes
Cool	Rain	70	No	Yes
Cool	Overcast	72	Yes	Yes
Mild	Sunny	77	No	**No**
Cool	Sunny	70	No	Yes
Mild	Rain	69	No	Yes
Mild	Sunny	65	Yes	Yes
Mild	Overcast	77	Yes	Yes
Hot	Overcast	74	No	Yes
Mild	Rain	77	Yes	**No**
Cool	Rain	73	Yes	**No**
Mild	Rain	78	No	Yes

DECISION TREES & RANDOM FOREST

Temperature	Outlook	Humidity	Windy	Played?
Mild	Sunny	80	No	Yes
Hot	Sunny	75	Yes	**No**
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Cool	Sunny	70	No	Yes
Mild	Rain	69	No	Yes
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Mild	Overcast	77	Yes	Yes
Hot	Overcast	74	No	Yes
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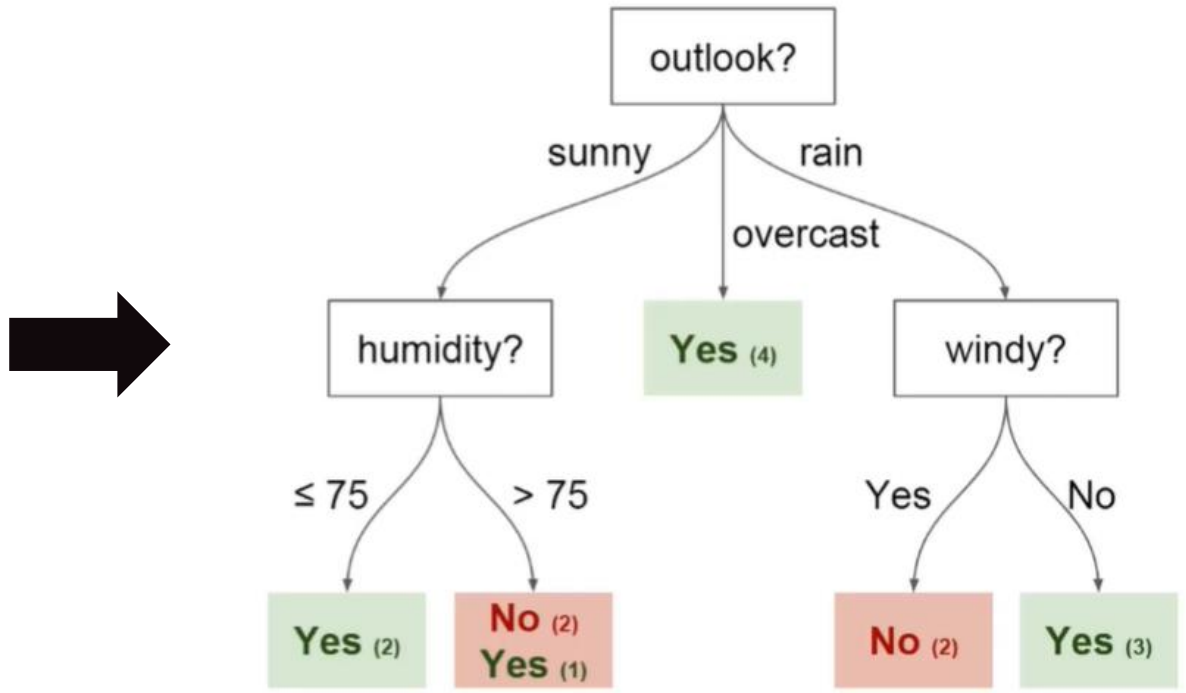
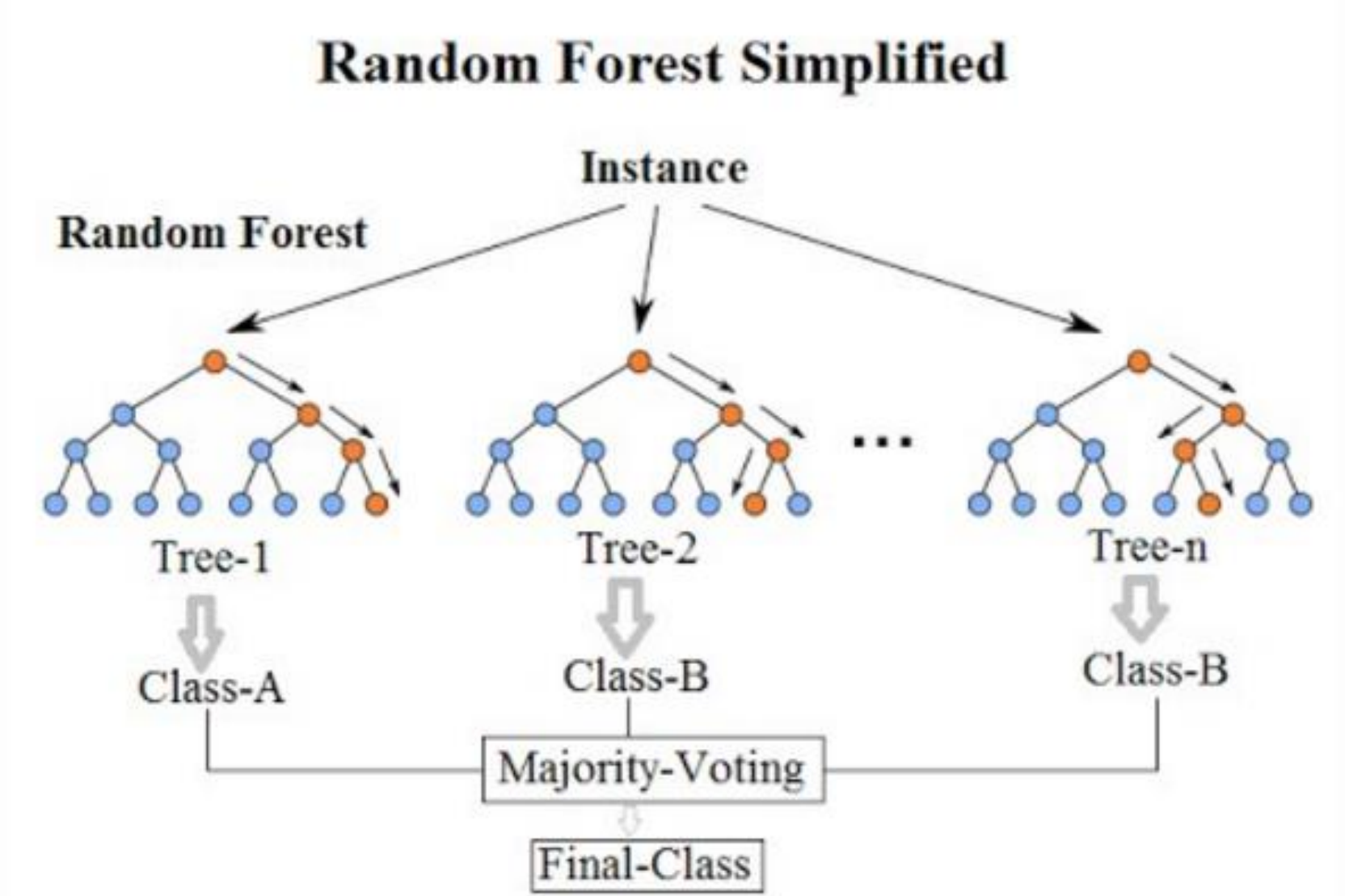
Cool	Rain	73	Yes	**No**
Mild	Rain	78	No	Yes



DECISION TREES & RANDOM FOREST



SVM – SUPPORT VECTOR MACHINE

- Recognize Patterns
- Classification
- Regression Analysis

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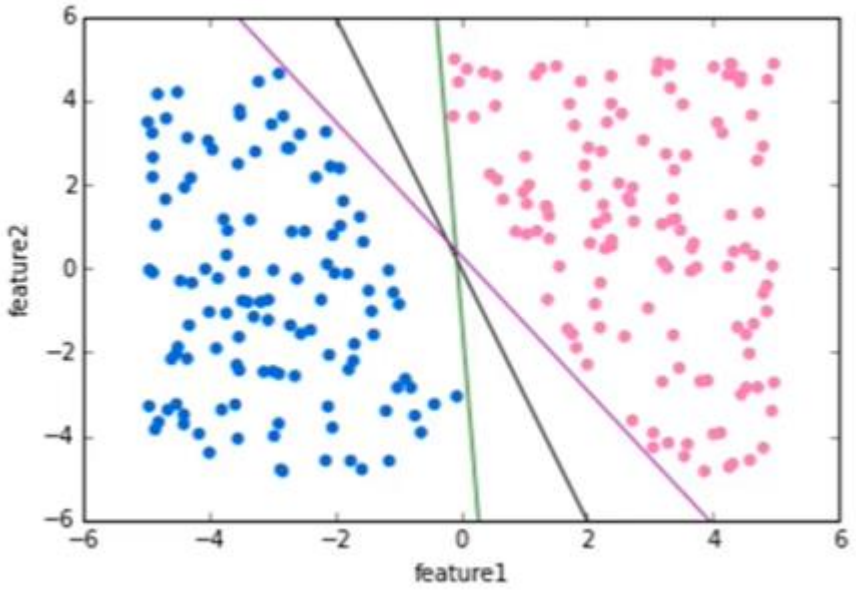

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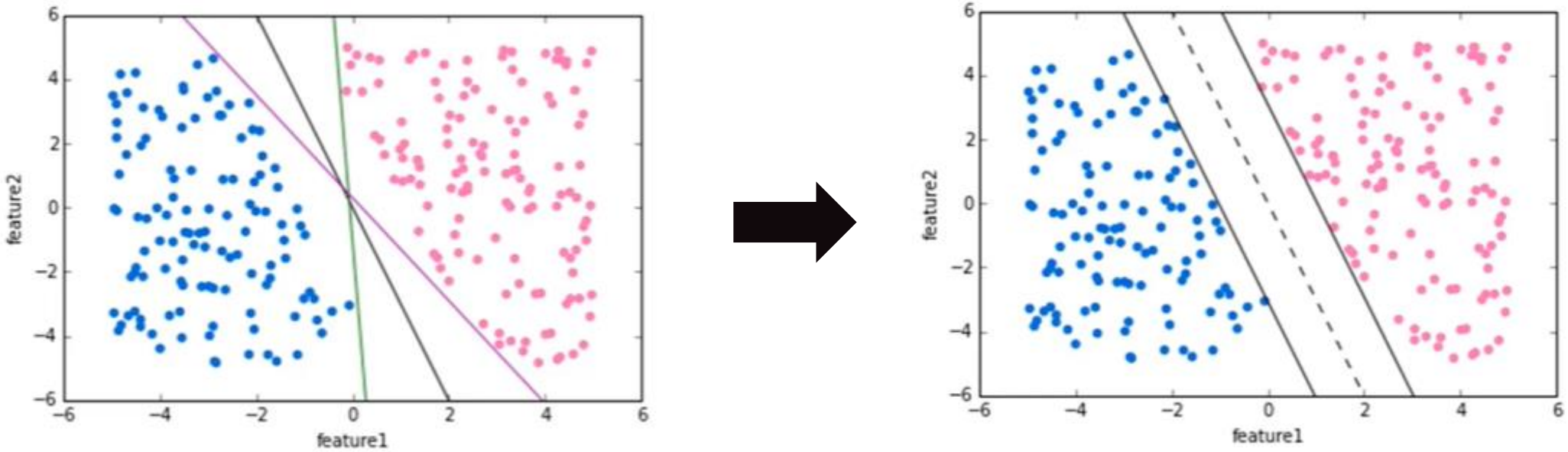

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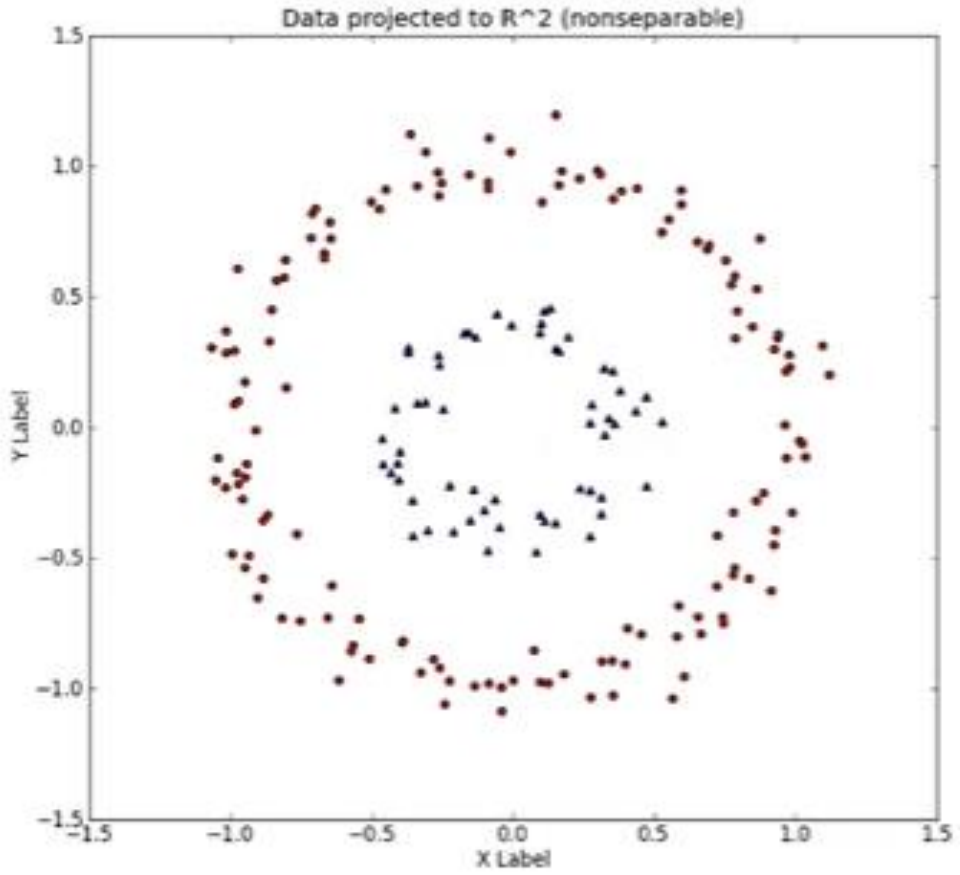

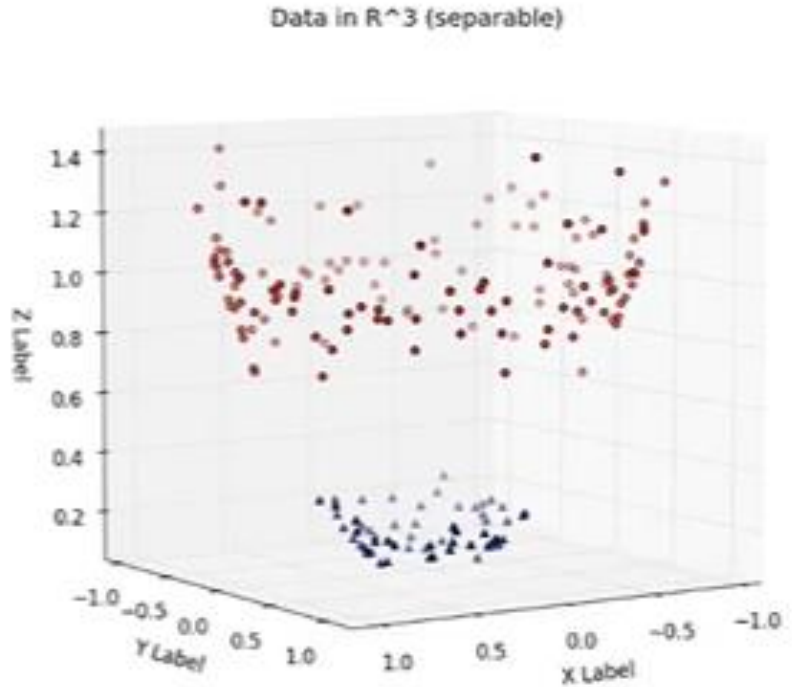

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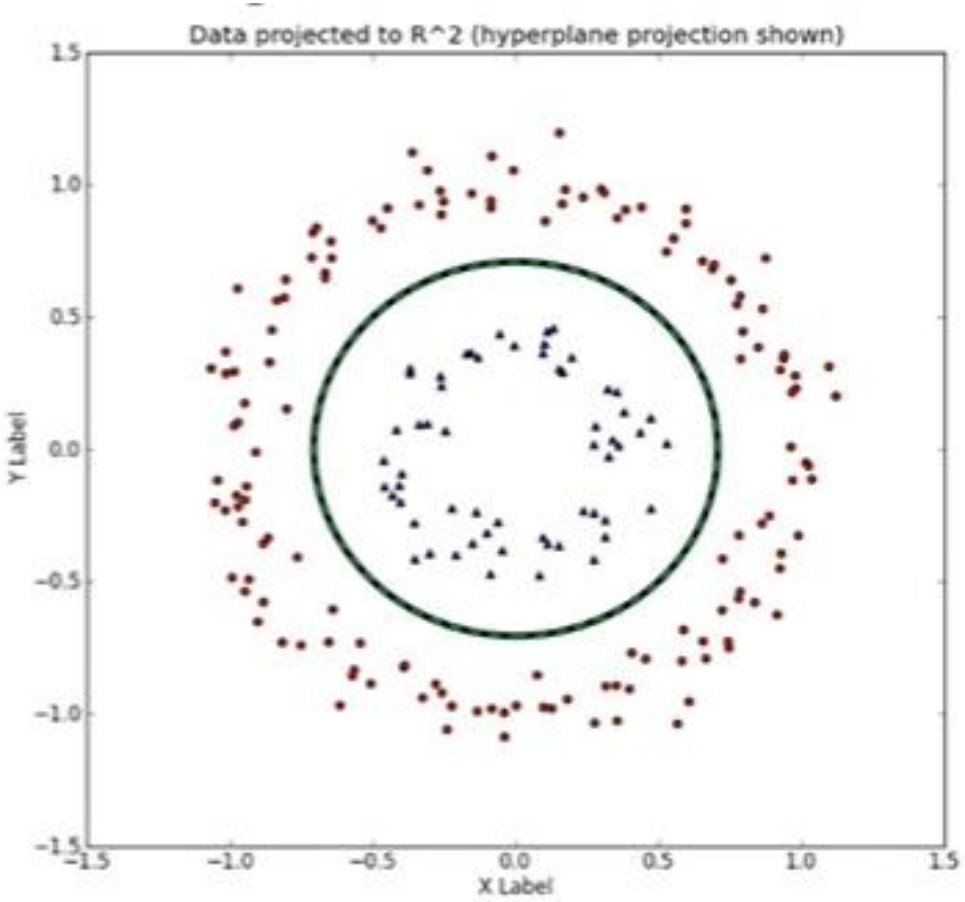

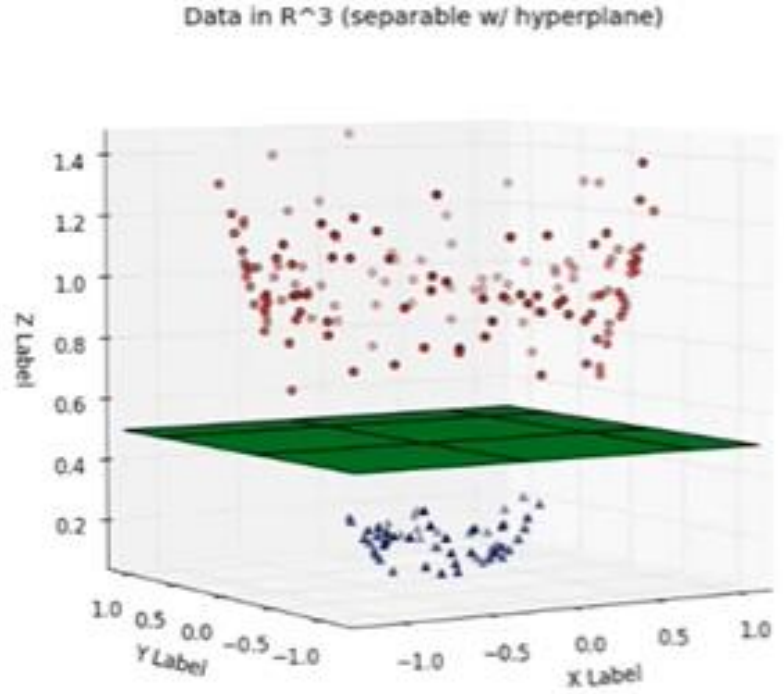

K MEANS CLUSTERING

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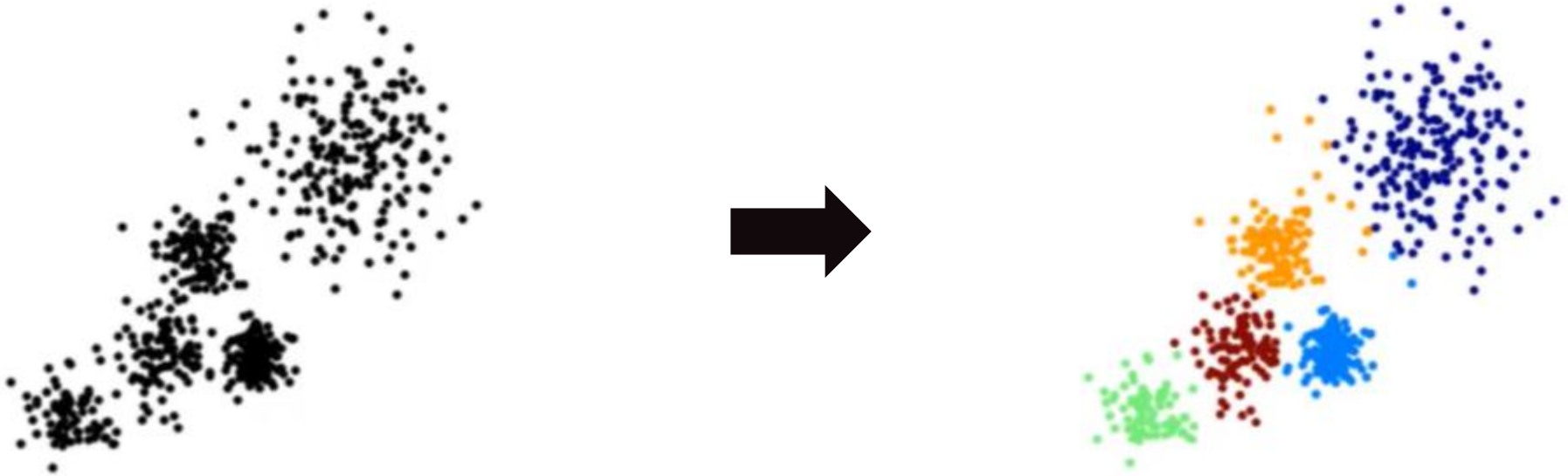

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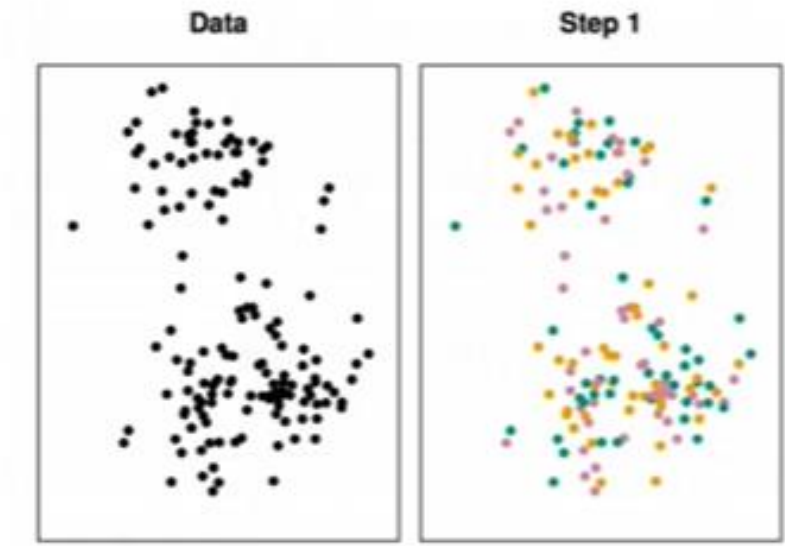

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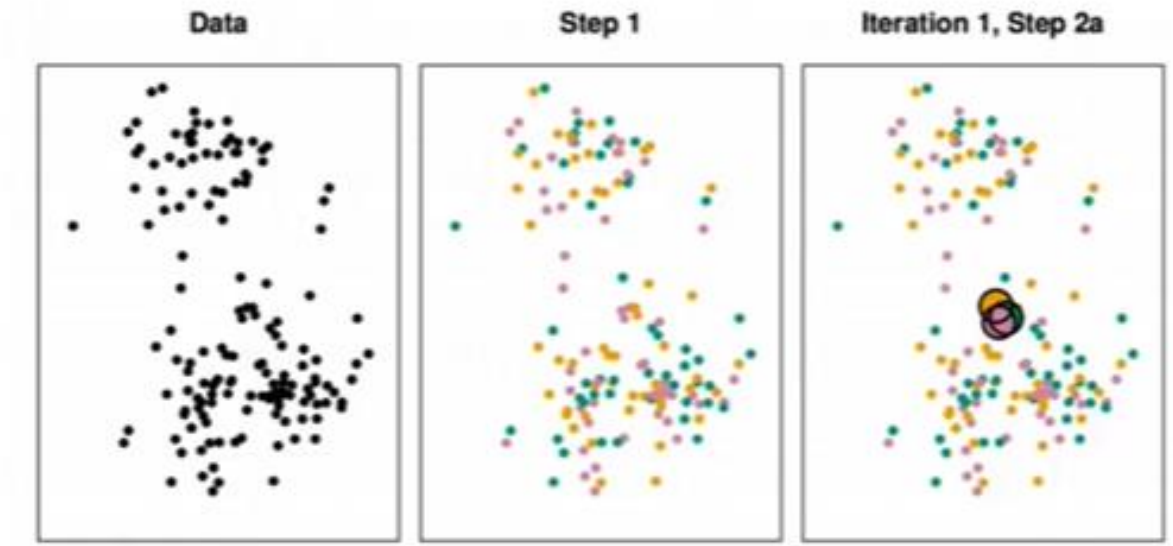

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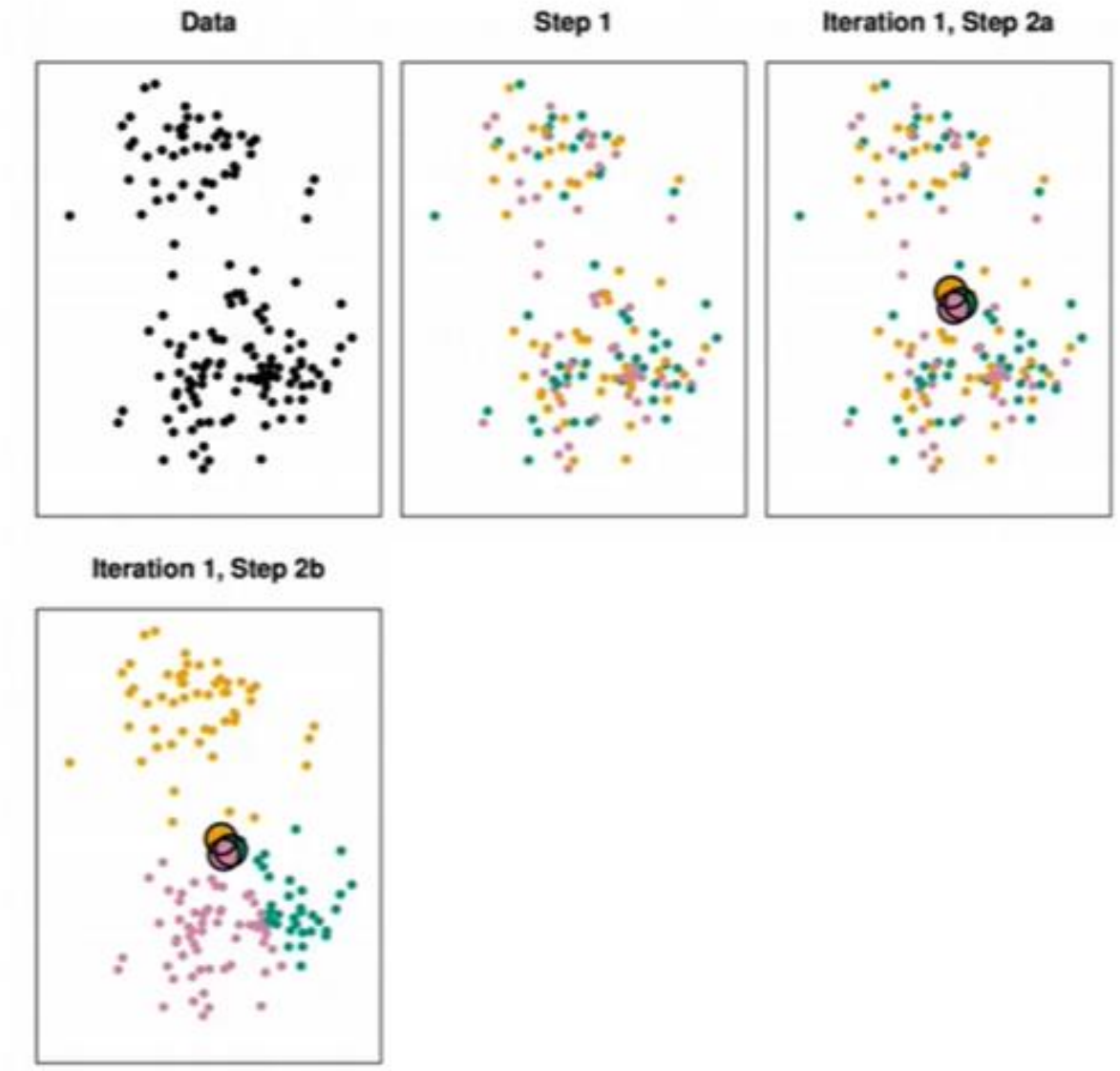

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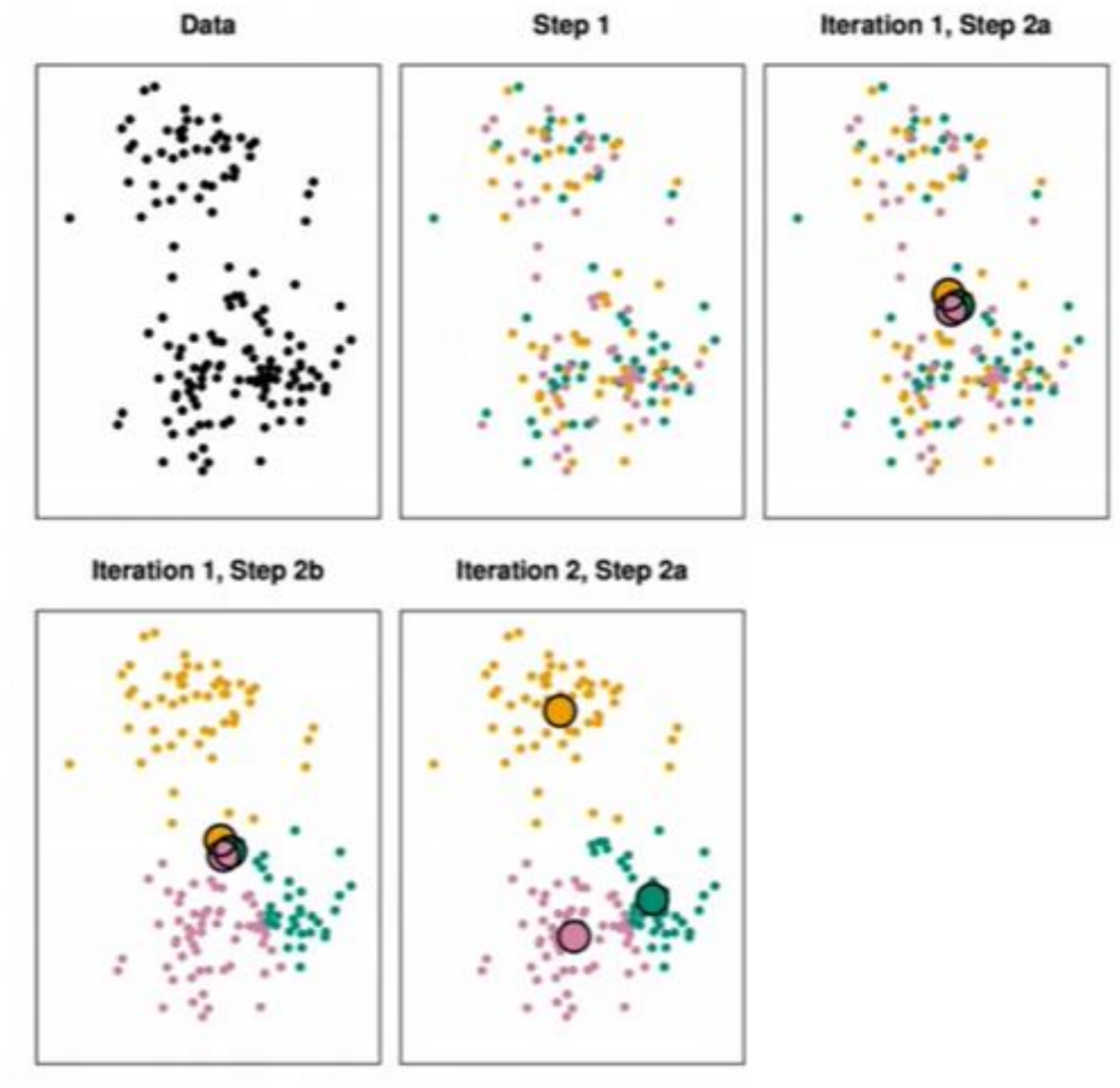

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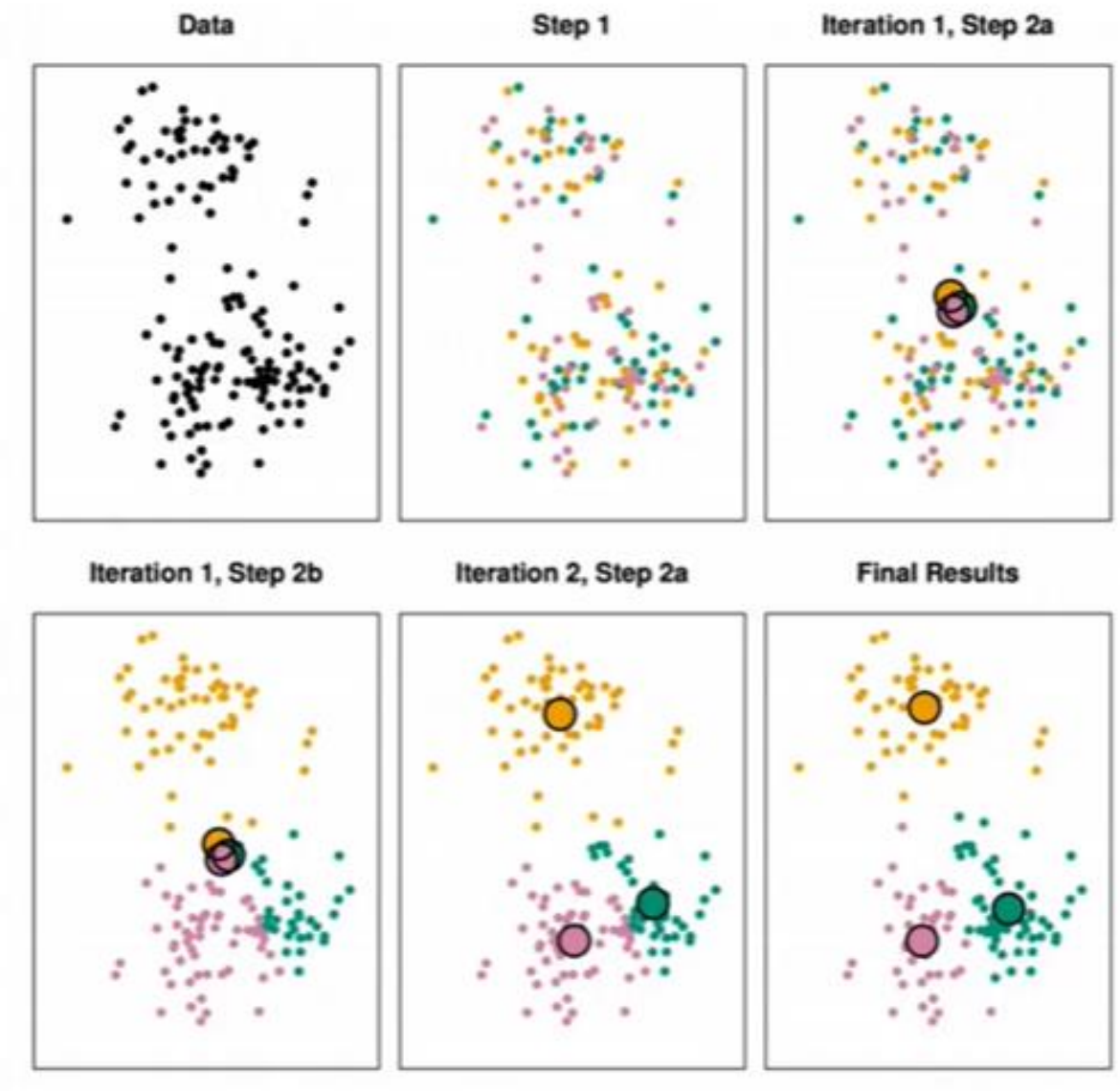

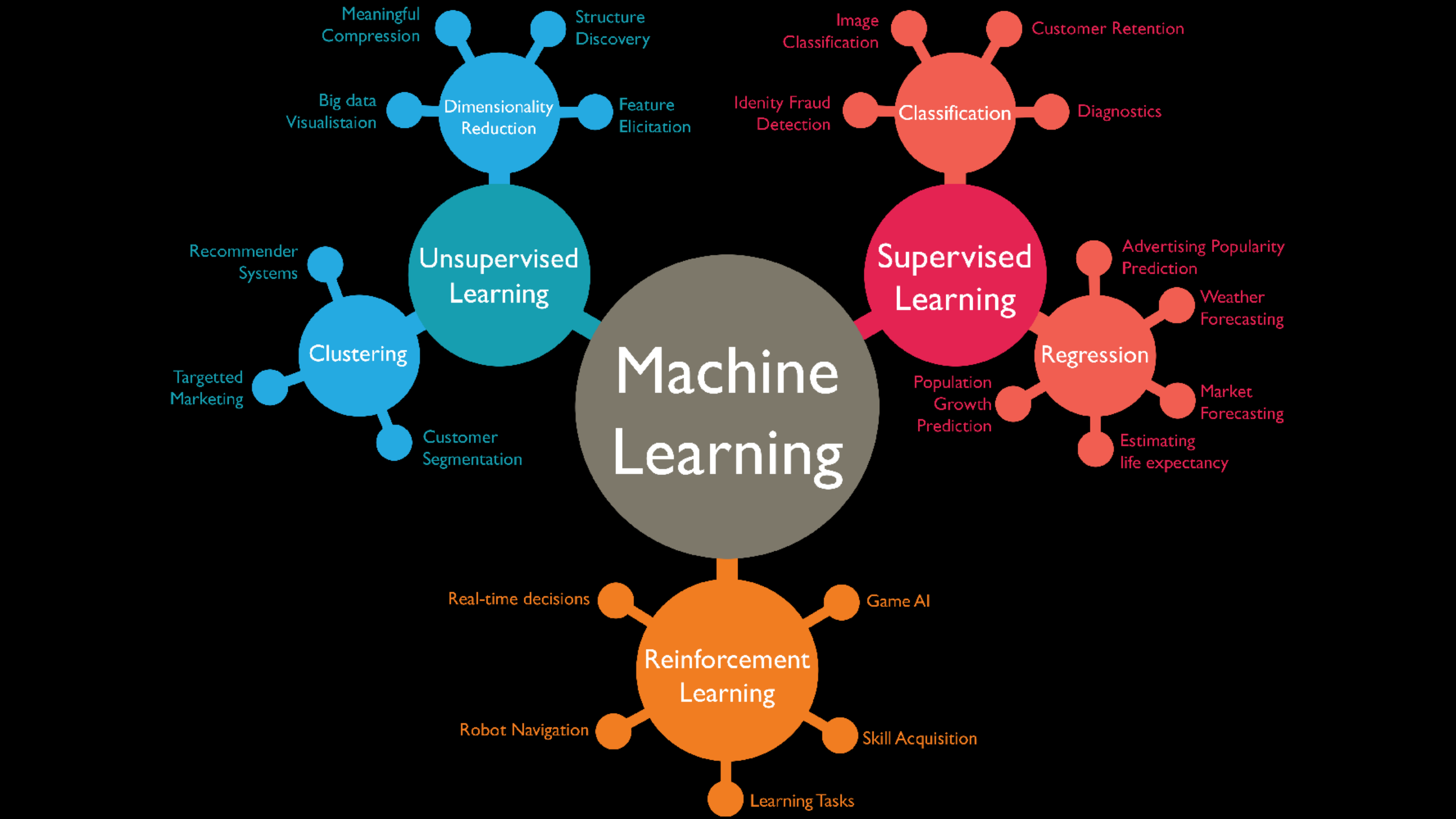
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Weather Forecasting
Population Growth Prediction
Market Forecasting
Estimating life expectancy
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Real-time decisions
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Robot Navigation
Skill Acquisition
Learning Tasks

LET'S CODE

1 - LOGIN ON GOOGLE DRIVE

2 – SEARCH FOR: GOOGLE COLAB

3 – CREATE NEW PYTHON3 NOTEBOOK


Thanks!
Henrique Padovani
padovani.h@hotmail.com
51 9 9622 3118