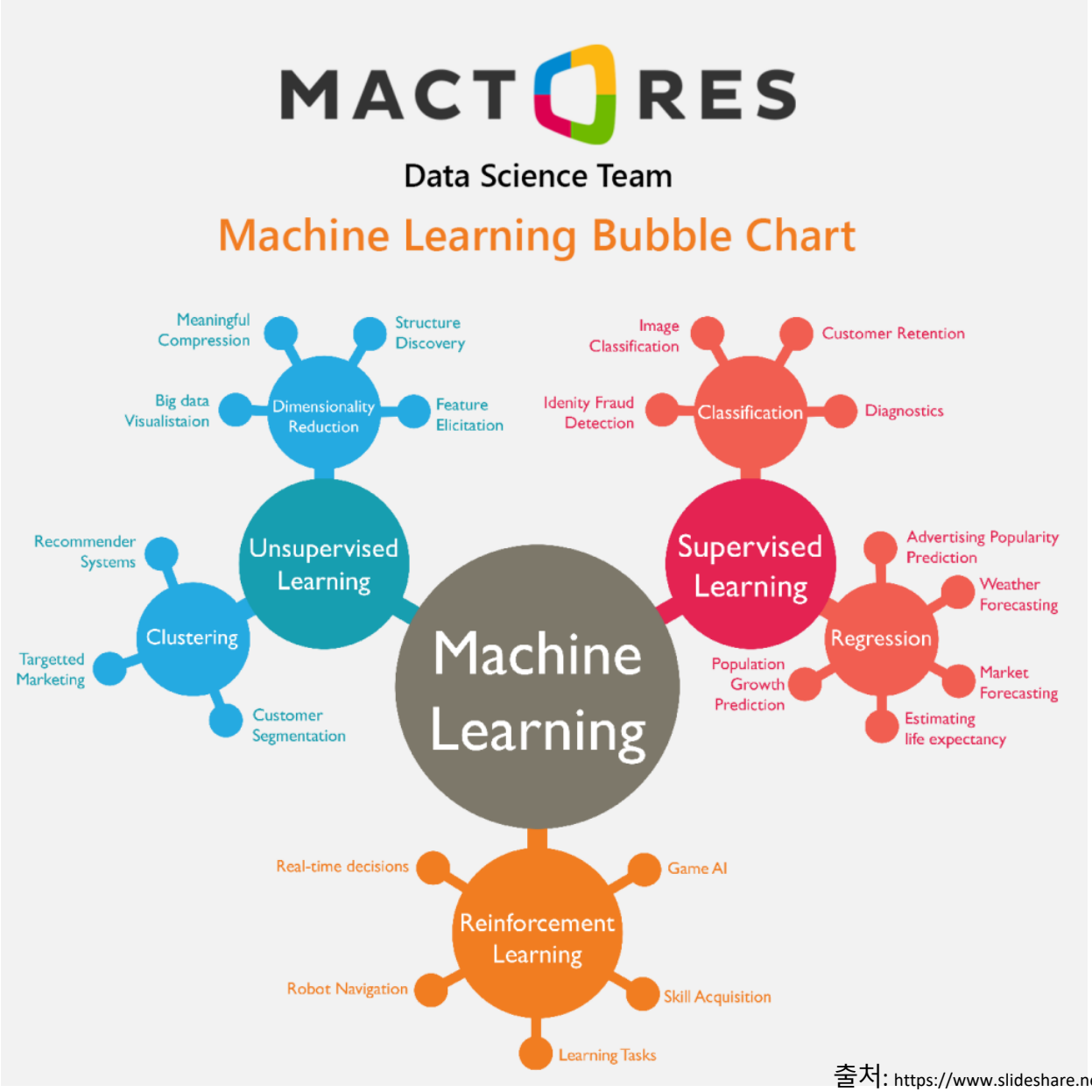
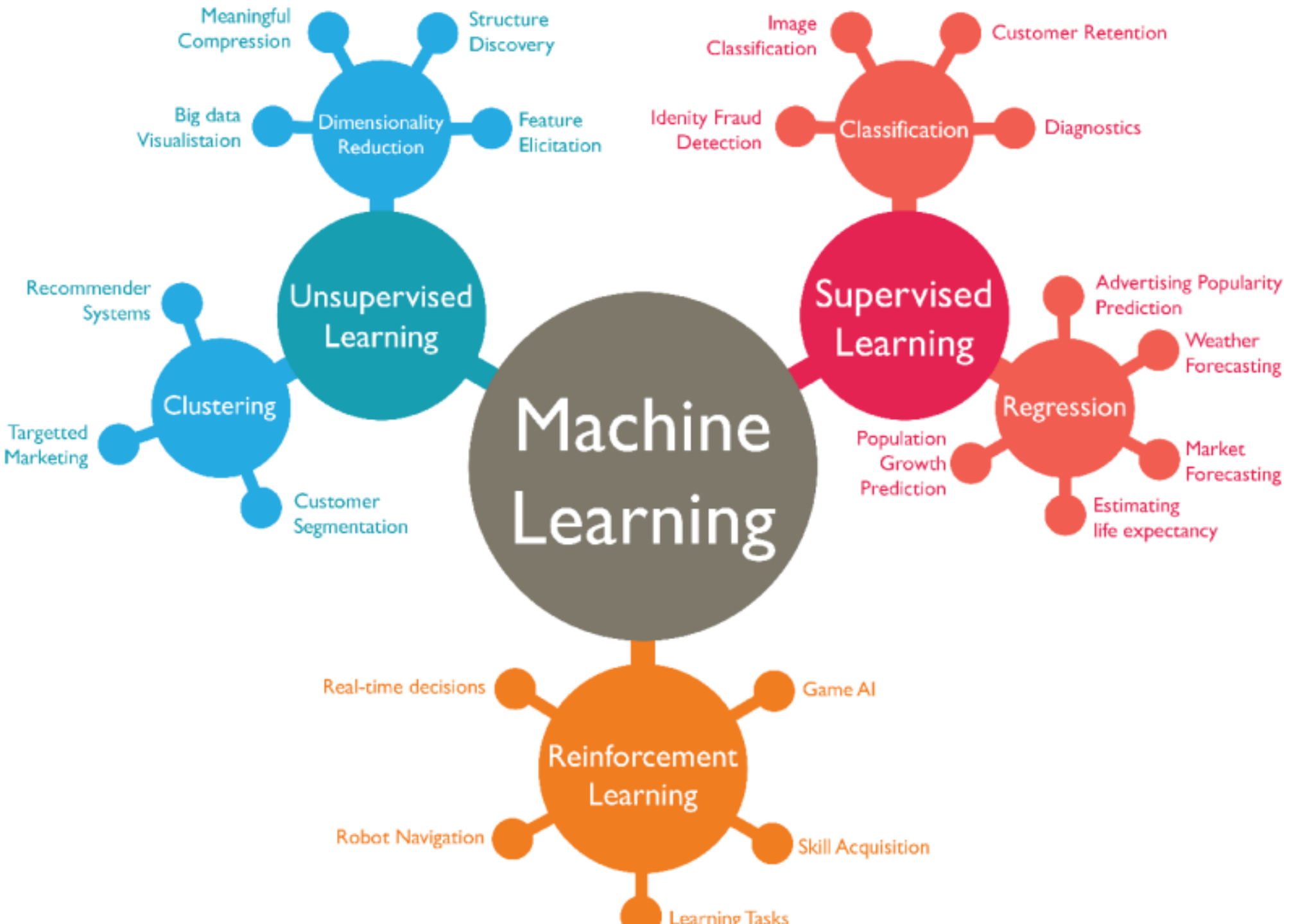
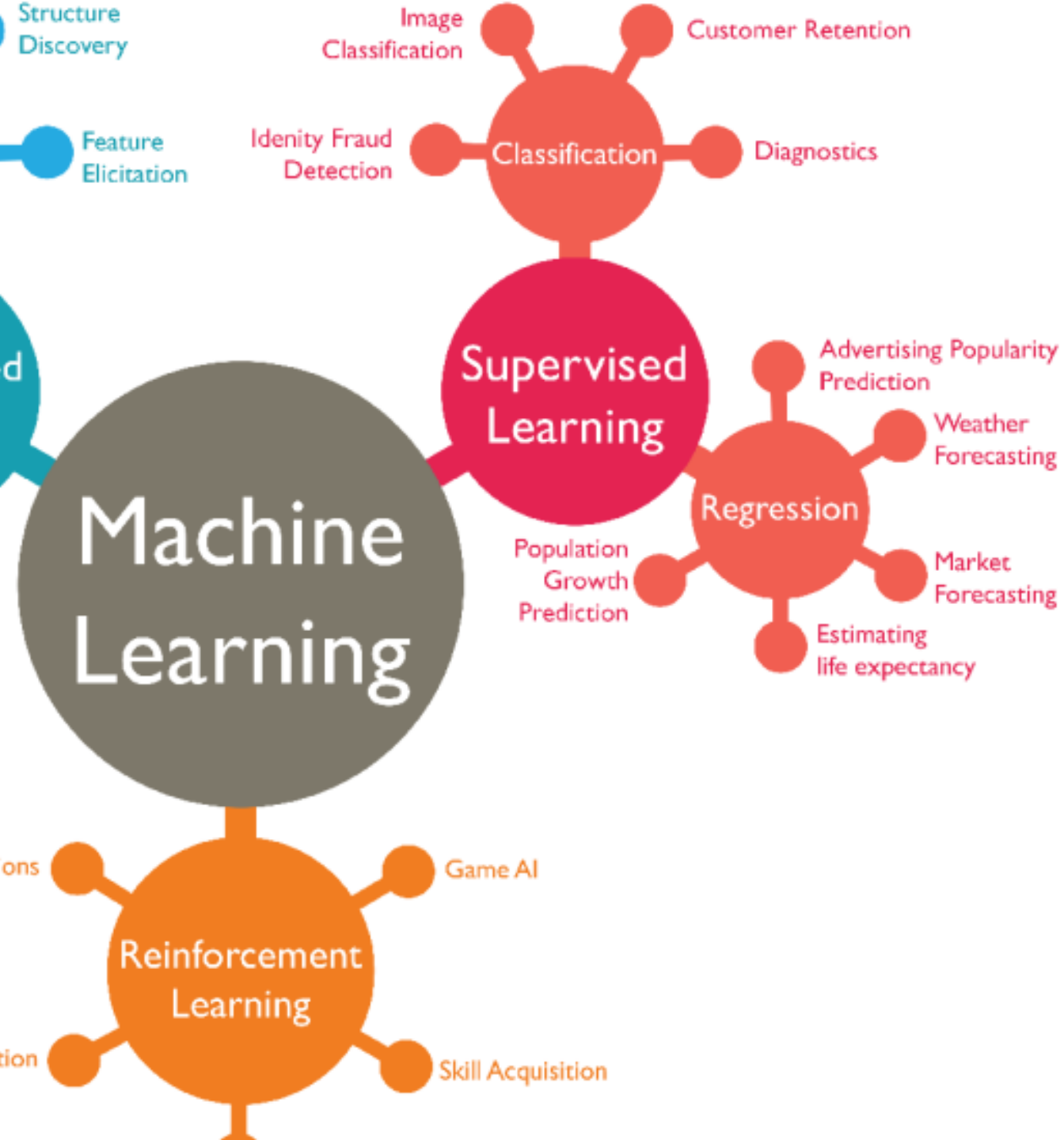
02 Machine Learning algorithm

머신 러닝의 종류



출처: https://www.slideshare.net/awahid/big-data-and-machine-learning-for-businesses


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

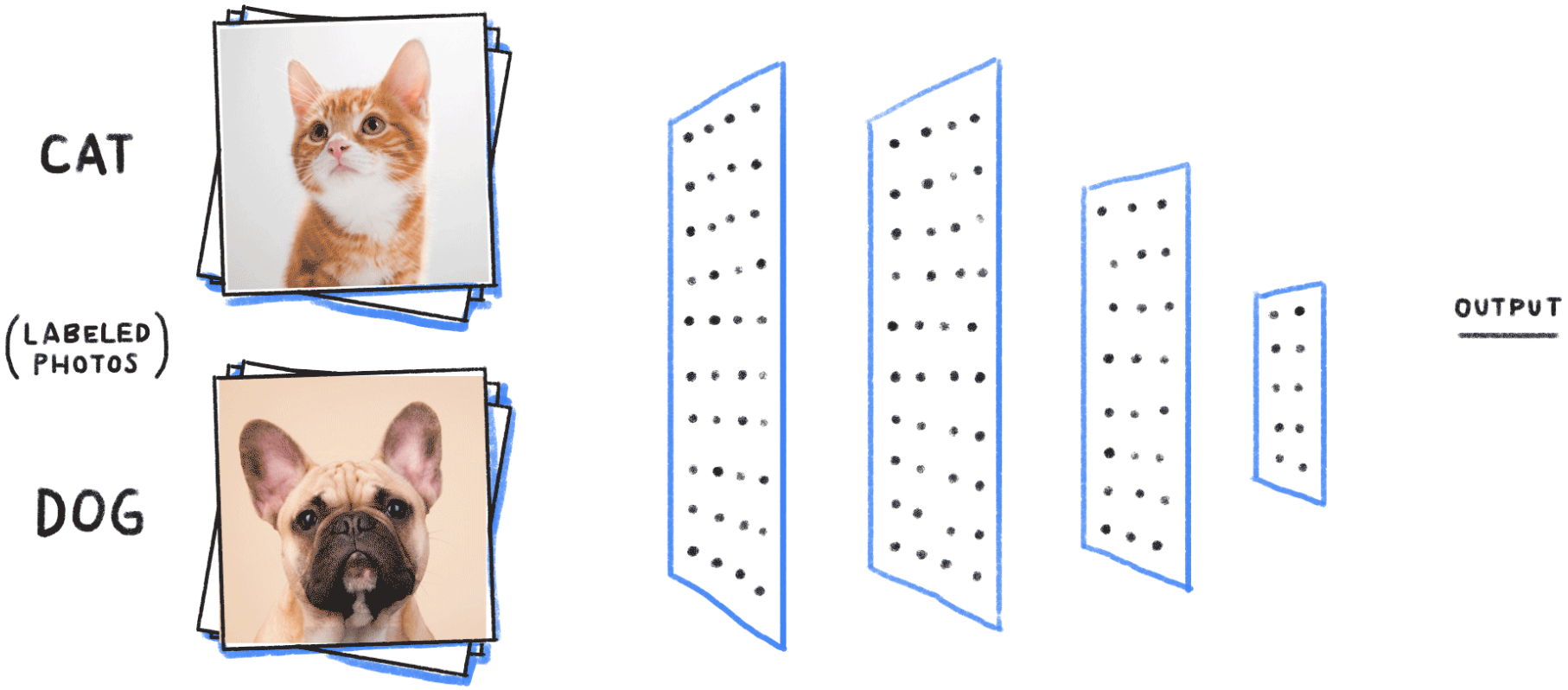


□ Supervised Learning
(지도학습, 감독학습)

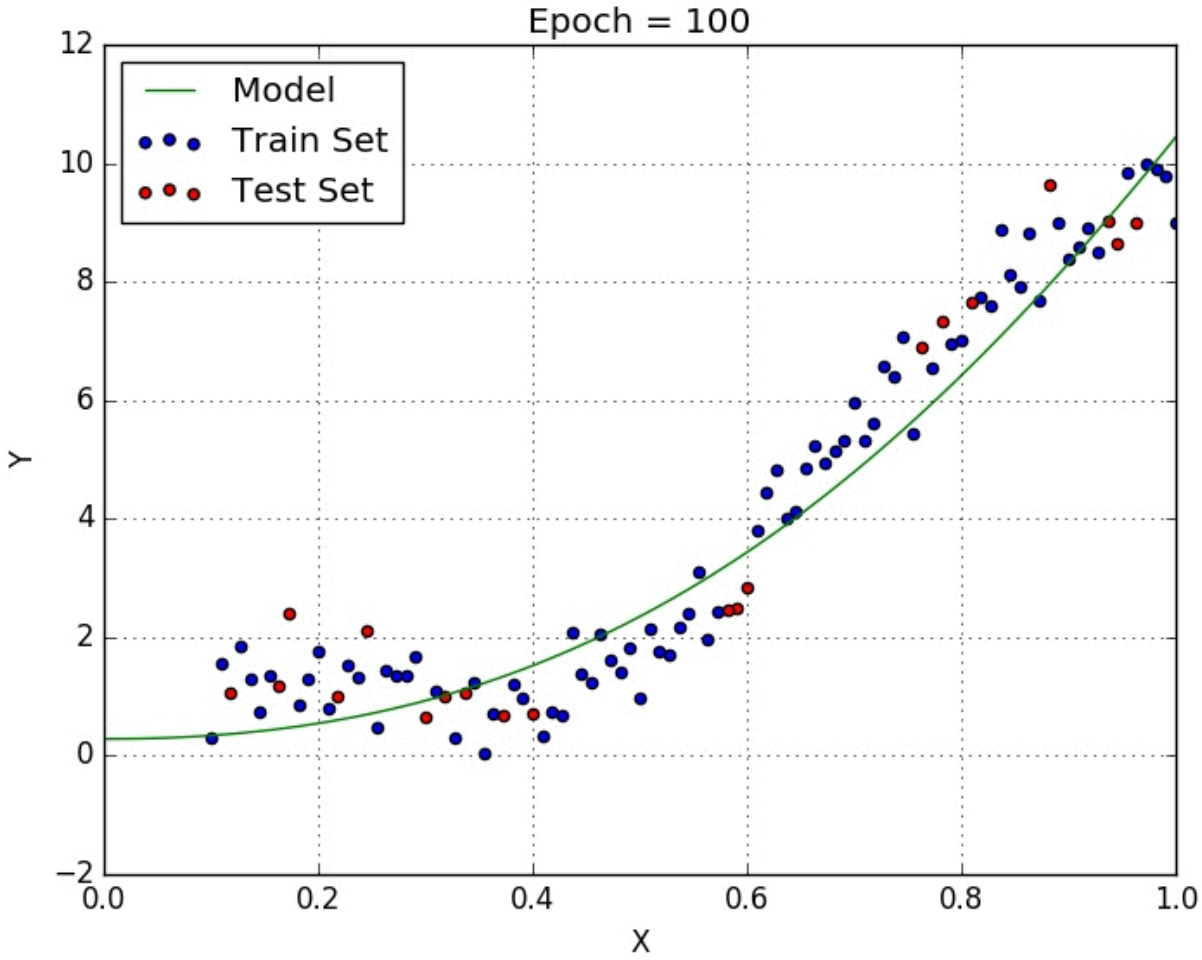
- 문제와 정답 제공
  : Feature & Label

- 예측, 추정, 분류
  · Regression
  · Forecast
  · Classification

Classification



출처: https://becominghuman.ai/building-an-image-classifier-using-deep-learning-in-python-totally-from-a-beginners-perspective-be8dbaf22dd8



키에 따른 신발 사이즈
시간에 따른 커피 소비량
햇빛 노출 시간과 주근깨 개수
달 위상에 따른 주요 도시의 범죄 소
기온과 인터넷 쇼핑 장바구니 물품 수

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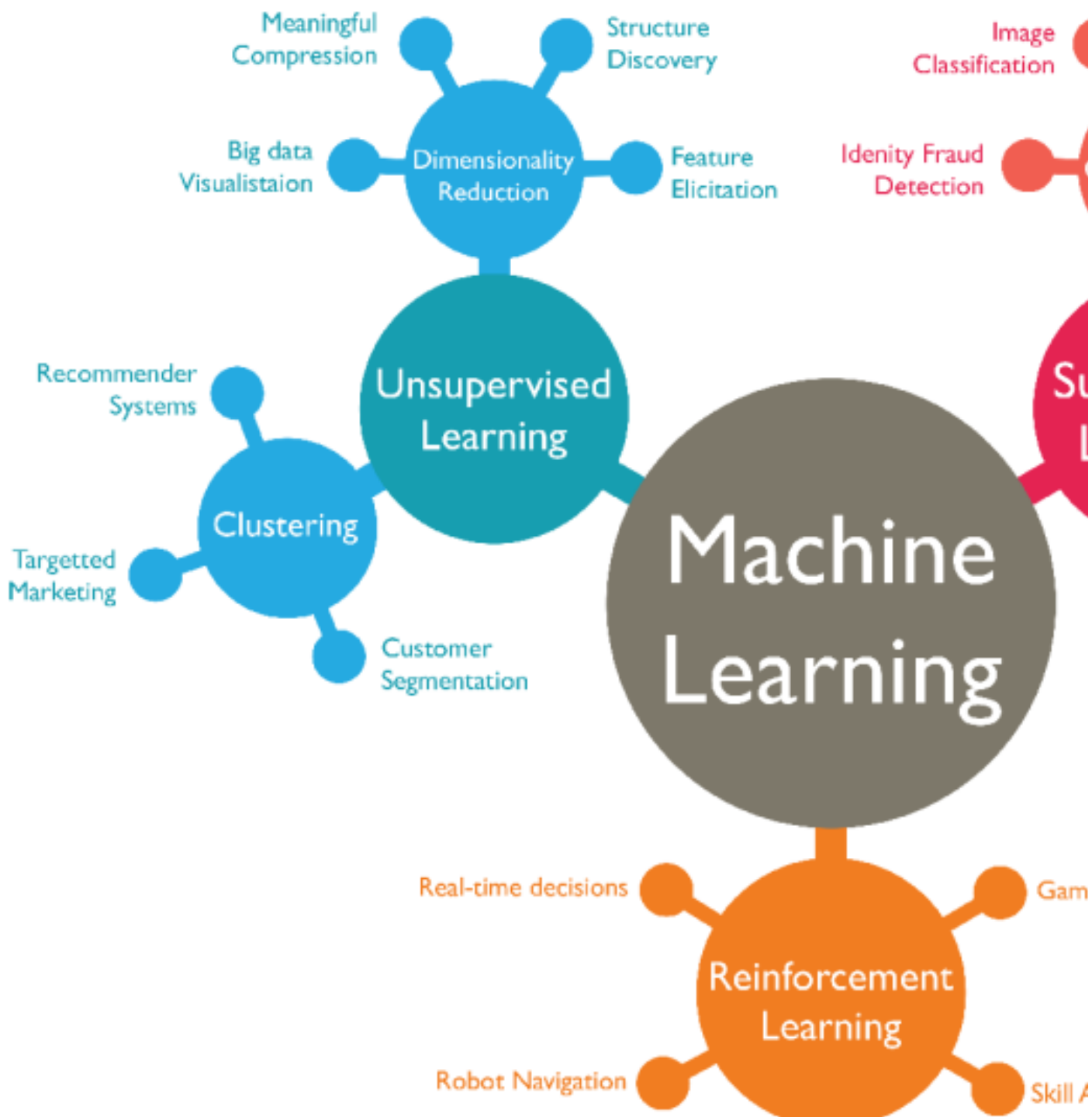
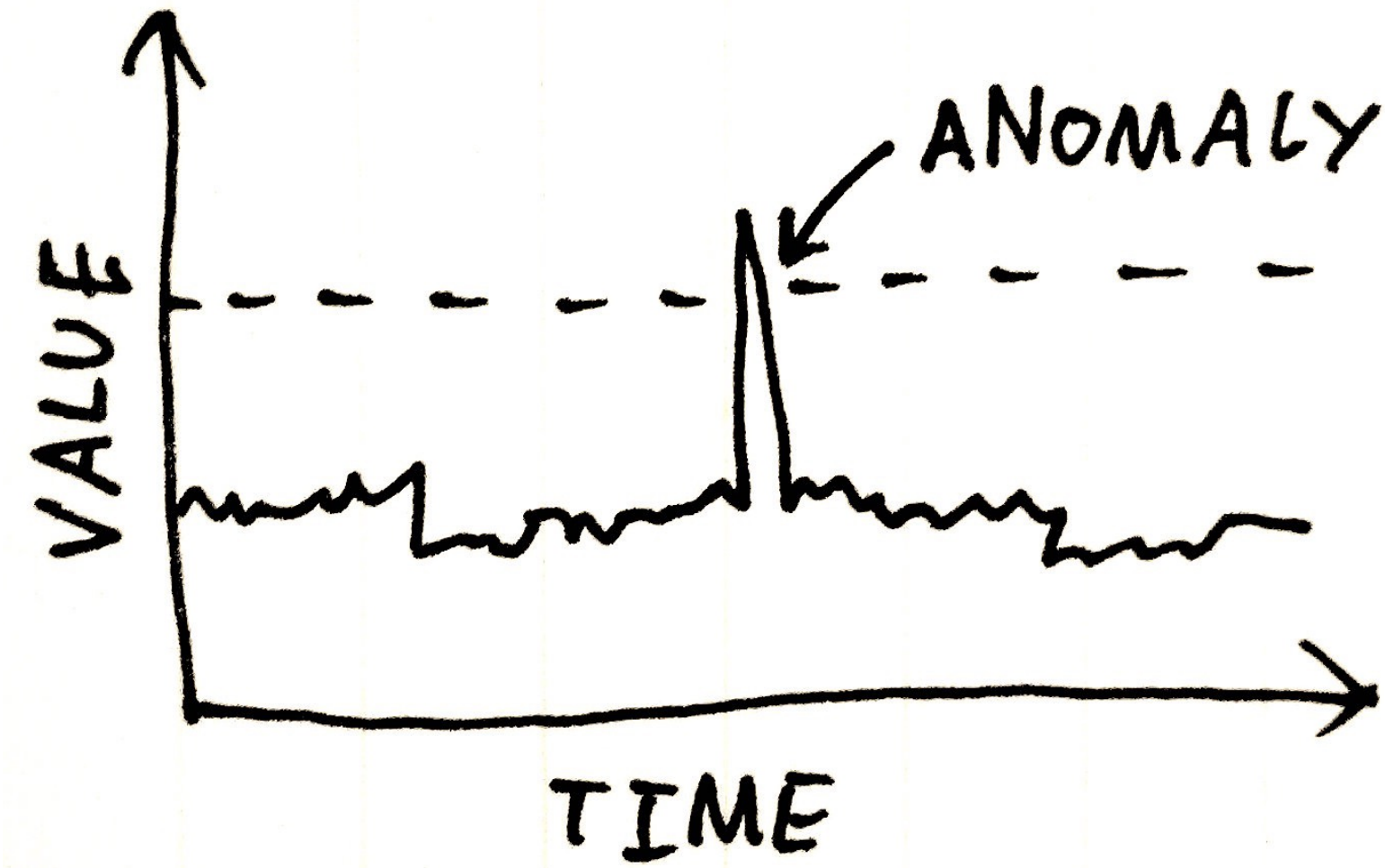


□ Unsupervised Learning
(비지도학습)

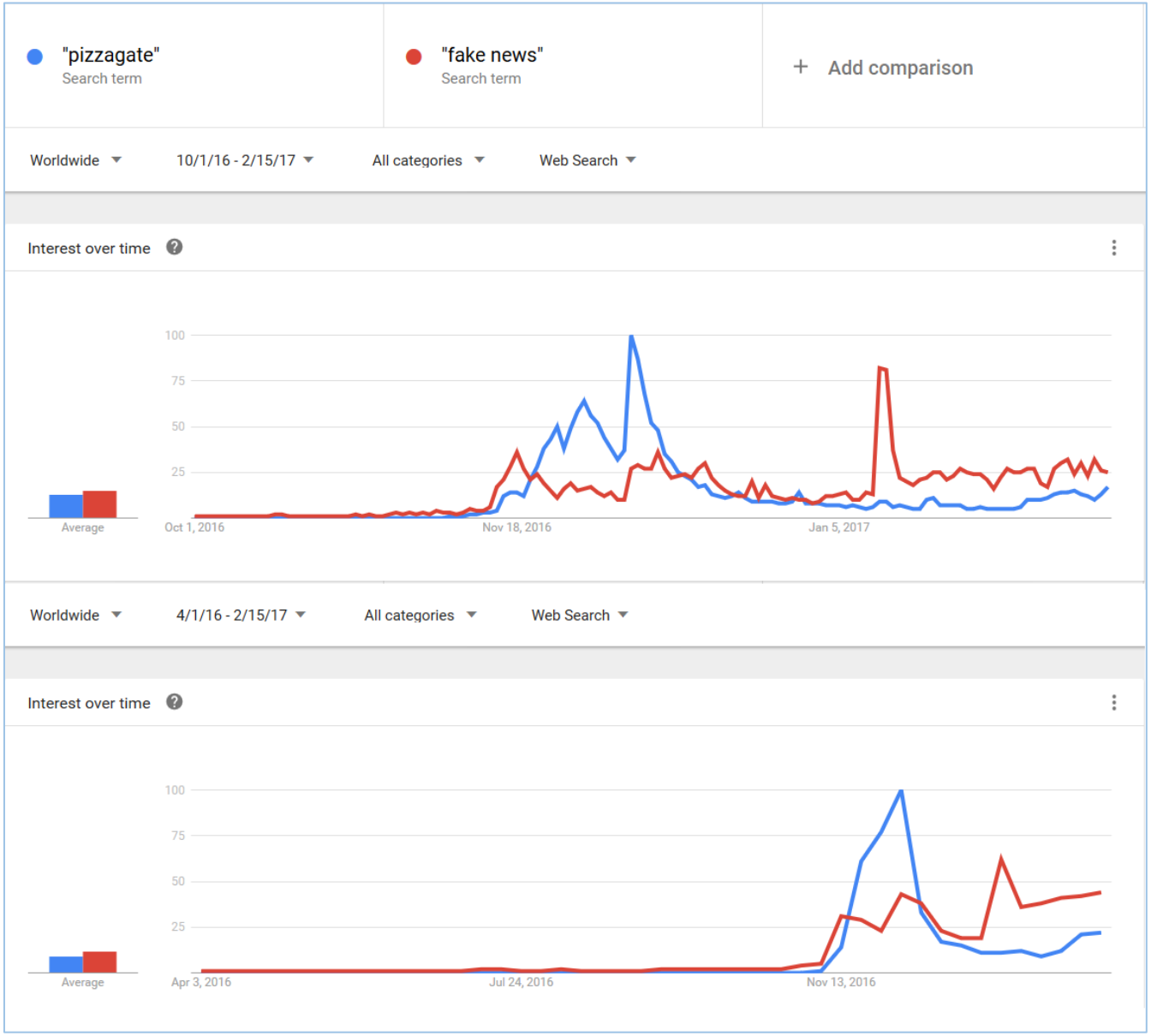
- 문제만 제공
  : Feature

- 패턴/구조 발견
  그룹화
  · Anomaly
  · Clustering

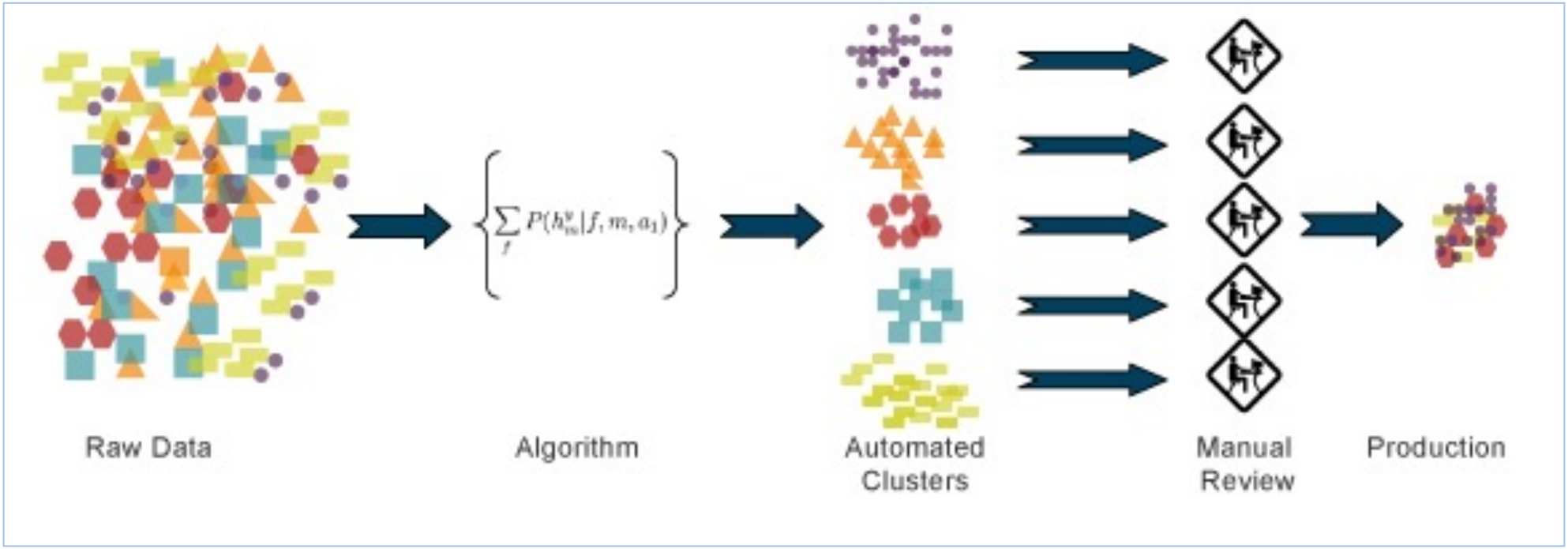

ANOMALY
VALUE
TIME

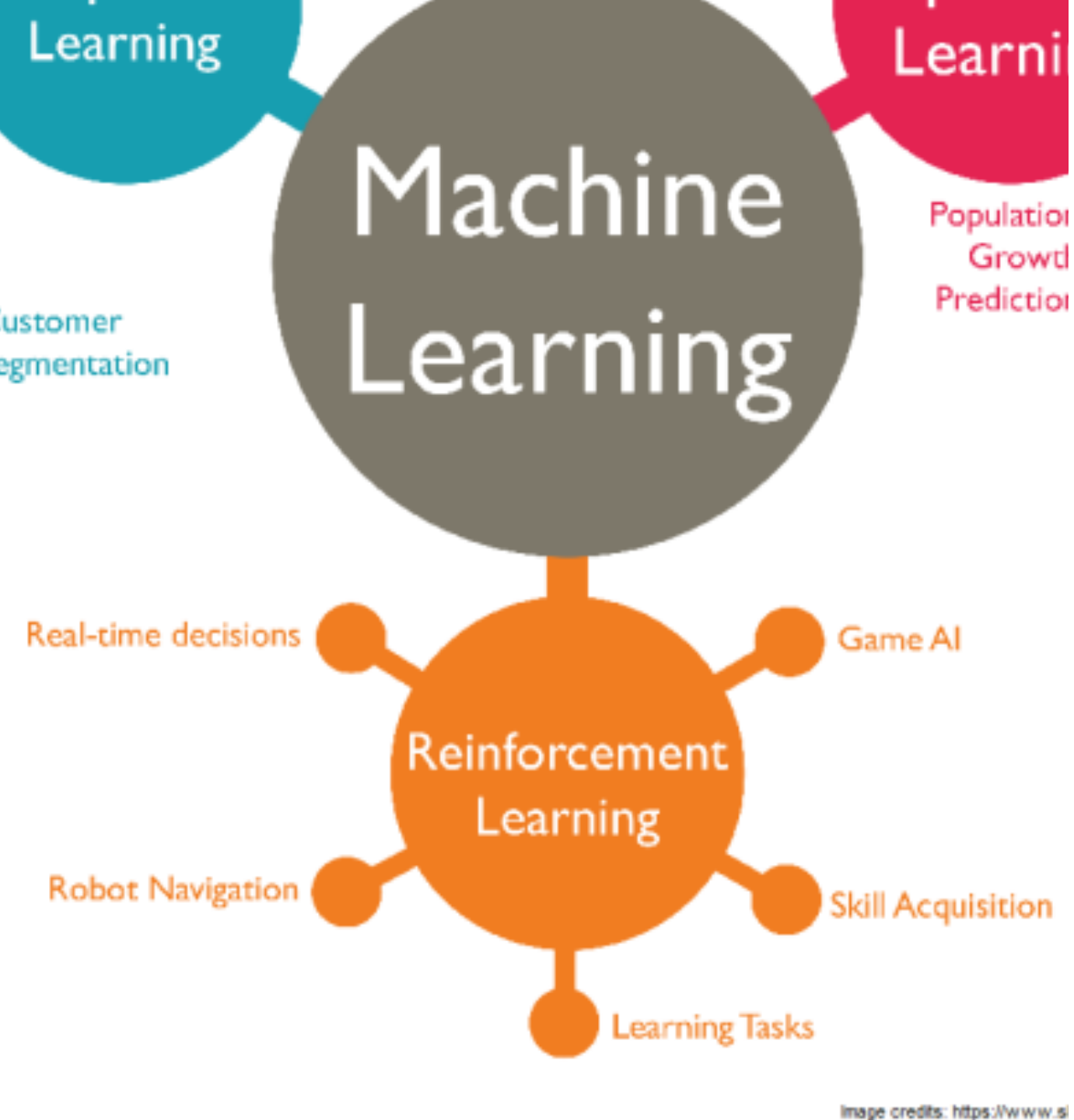
Anomaly

Hello AI



Clustering

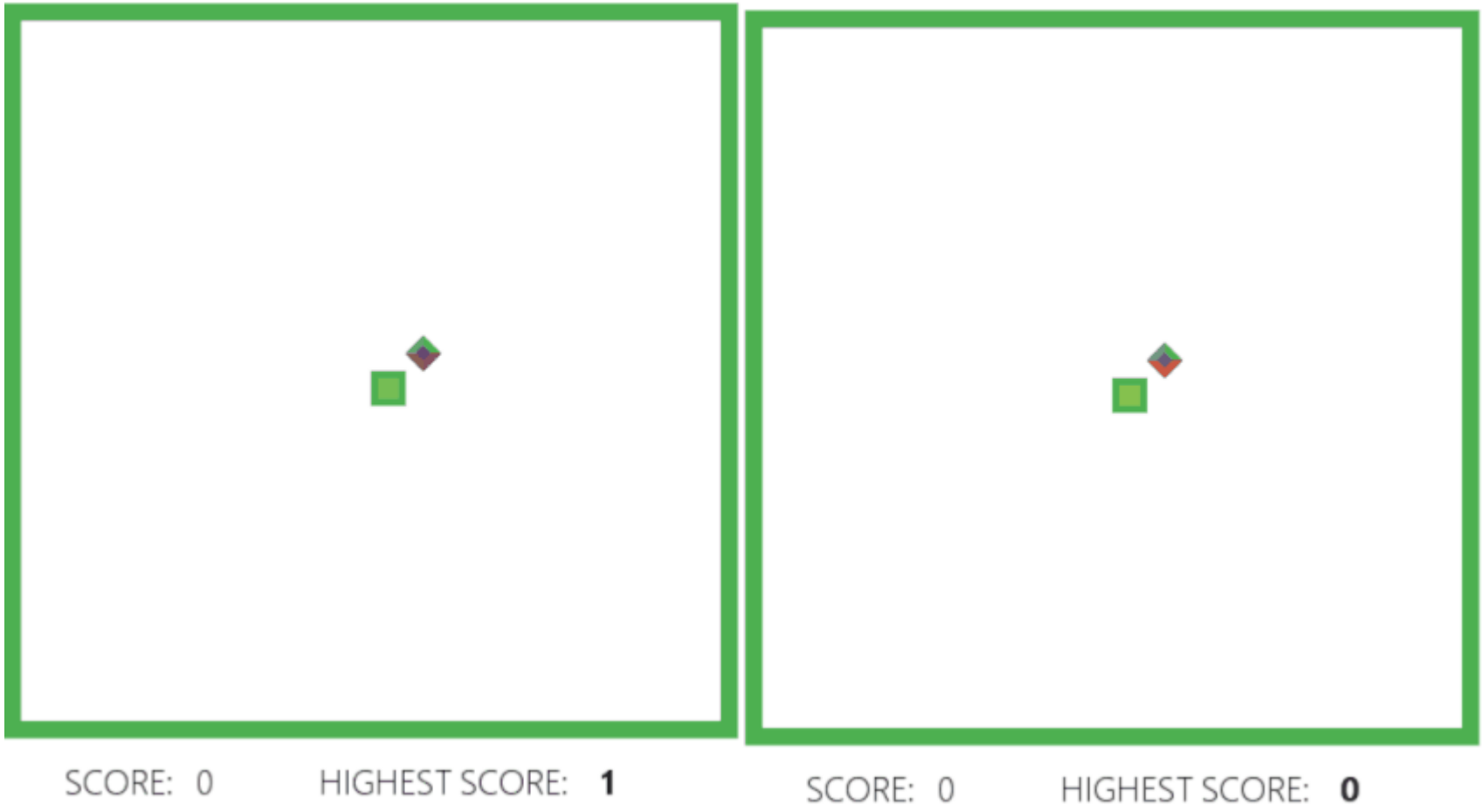

$\sum_f P(h_m^y | f, m, a_1)$
Raw Data
Algorithm
Automated Clusters
Manual Review
Production



□ Reinforcement Learning
(강화학습)

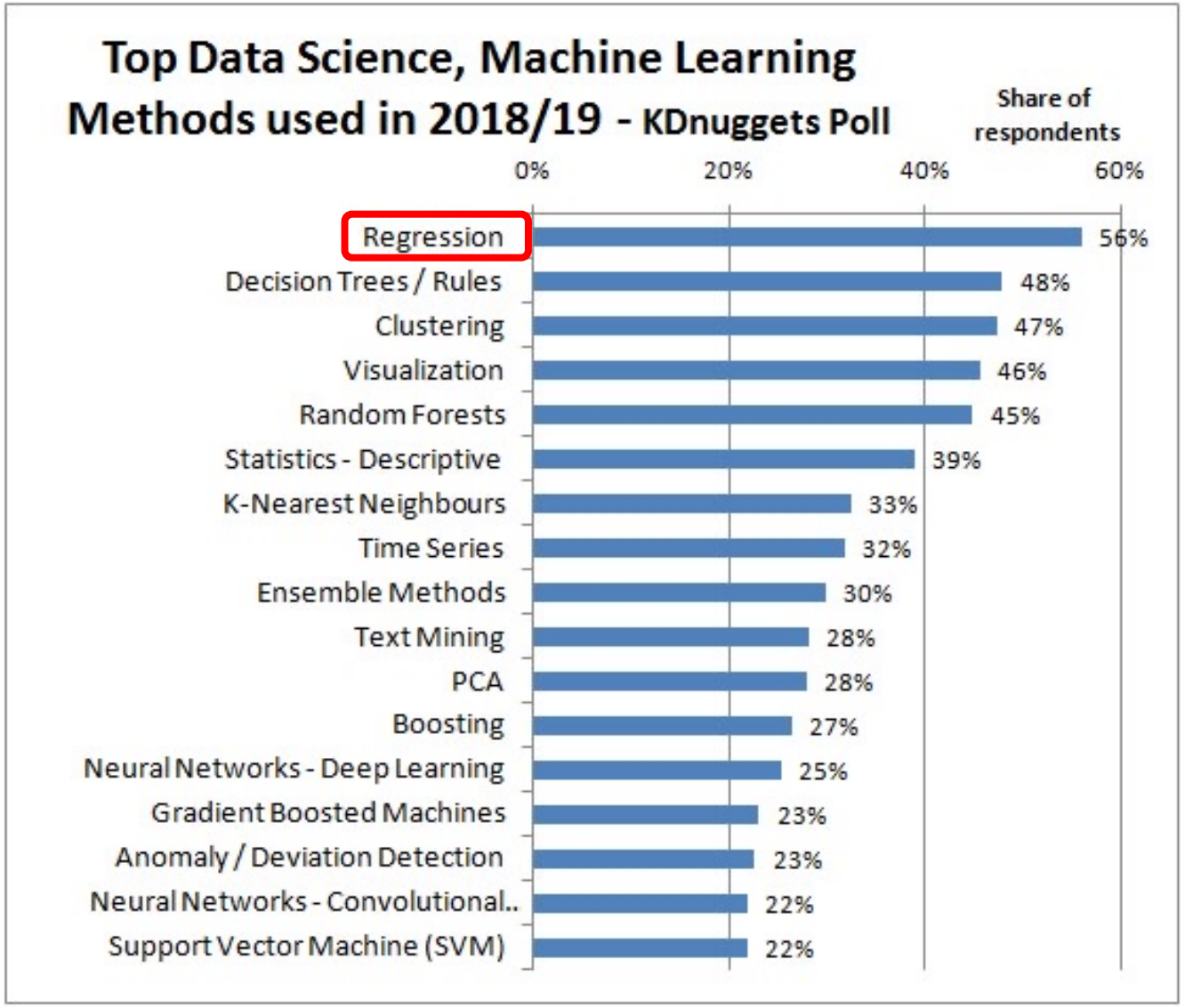
- 보상(Reward) 제공
인과관계가 중요
게임(알파고), 로봇

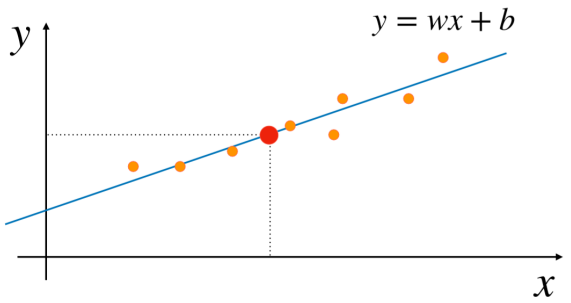
Reinforcement Learning



출처: https://towardsdatascience.com/how-to-teach-an-ai-to-play-games-deep-reinforcement-learning-28f9b920440a

Algorithm 사용 순위





https://www.kdnuggets.com/2019/04/top-data-science-machine-learning-methods-2018-2019.html

Summary

What is the Machine Learning

1 Machine Learning 은 AI, Machine Learning
그리고 Deep Learning으로 발전됨

2 Machine Learning은 지도학습, 비지도학습
그리고 강화학습 등으로 나누어 짐

3 알고리즘의 종류 : Regression, Classification, Anomaly, Clustering 등

감사합니다.