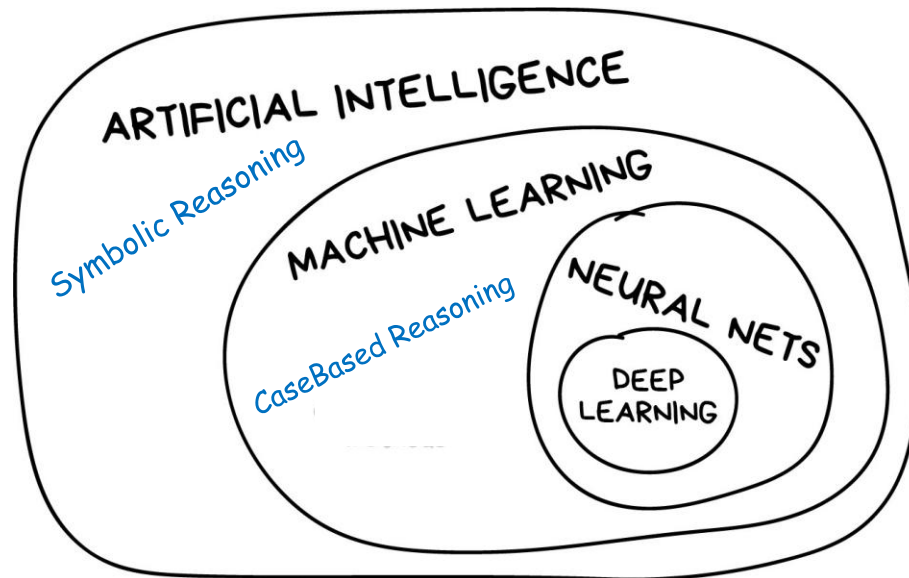
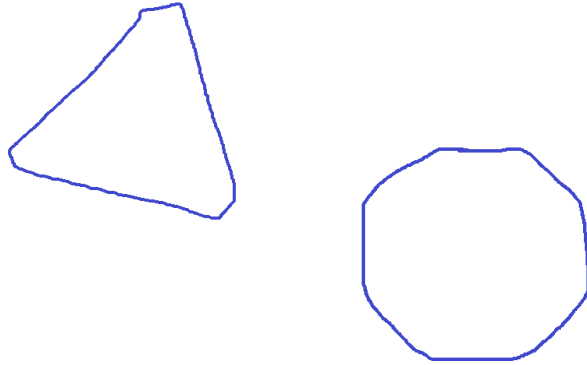




What is AI?

Understand Core Concept of
AI, ML, DL, CBR, LLM
Applications
Opportunities

haesung kim
knowhow+
haesung.github.io



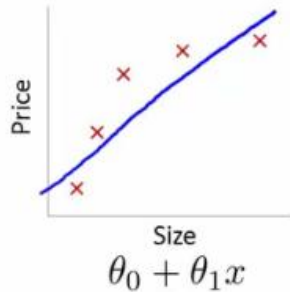
- What is being Intelligent?
 - Marvin Minsky 1970

NOT EASY !

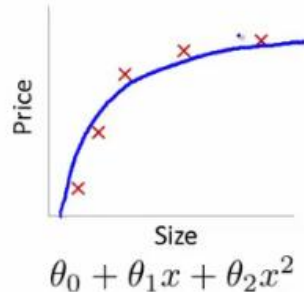
- Cannot Code
- Learn from Data

- Hard Areas
 - Reasoning 추론
 - Prediction 예측
 - Classification 분류
 - Creation 생성 (LLM)

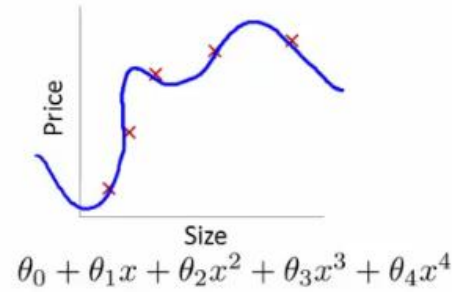
Machine Learning Core Concept



High bias
(underfit)



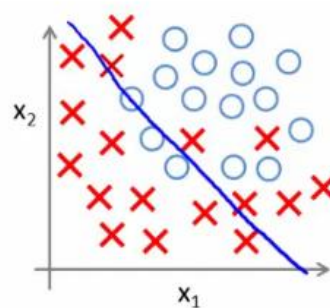
“Just right”



High variance
(overfit)

House Price
Prediction

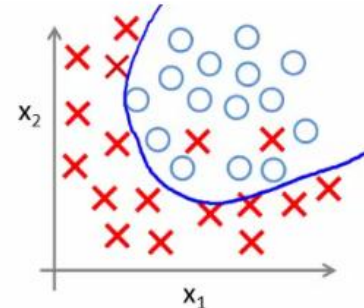
Hypertension
Classification



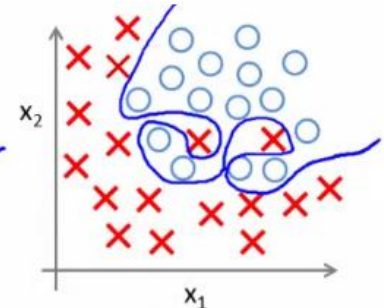
$$h_{\theta}(x) = g(\theta_0 + \theta_1 x_1 + \theta_2 x_2)$$

(g = sigmoid function)

UNDERFITTING
(high bias)

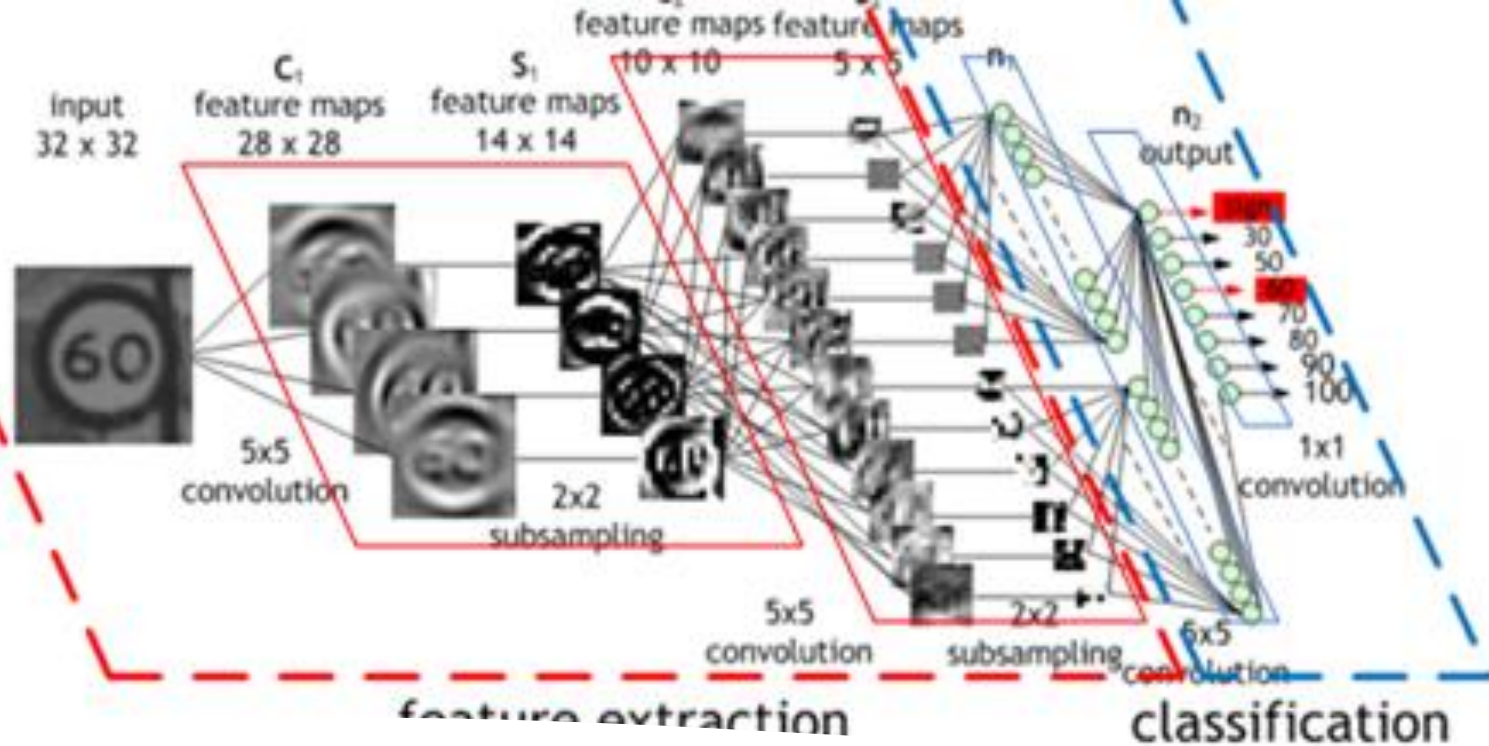


$$g(\theta_0 + \theta_1 x_1 + \theta_2 x_2 + \theta_3 x_1^2 + \theta_4 x_2^2 + \theta_5 x_1 x_2)$$



$$g(\theta_0 + \theta_1 x_1 + \theta_2 x_1^2 + \theta_3 x_1^2 x_2 + \theta_4 x_1^2 x_2^2 + \theta_5 x_1^2 x_2^3 + \theta_6 x_1^3 x_2 + \dots)$$

OVERFITTING
(high variance)



Why Deep Learning is Popular

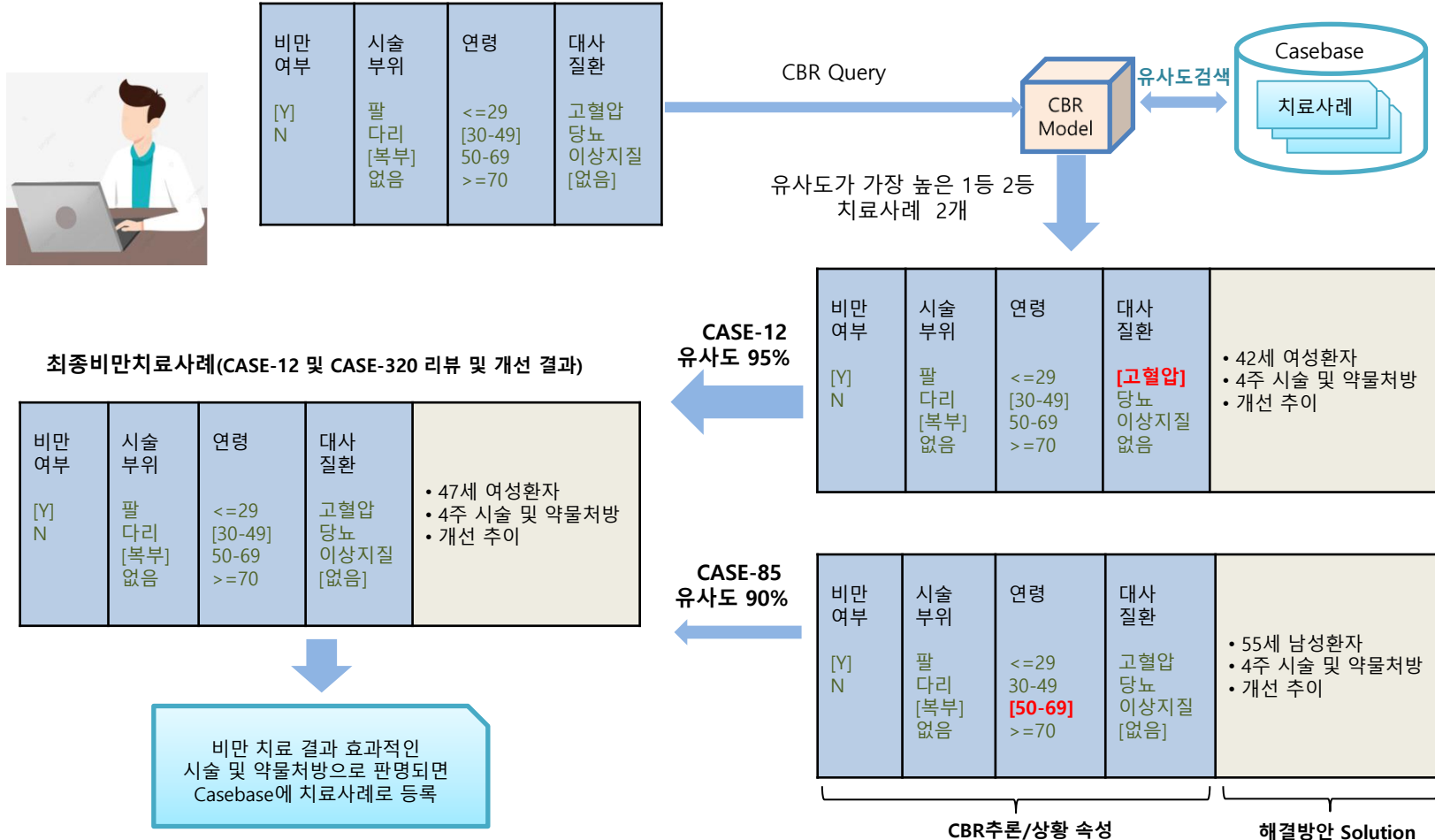
- New fancy word of Neural Net
 - Fast = cheap graphic cards (Nvidia)
 - Data = huge tagged data
 - Easy = CNN (auto feature extraction)
- Vision
 - 97% accuracy better than human expert 95%
 - <http://cs231n.stanford.edu/>

CBR (Case-Based Reasoning, 사례기반추론)

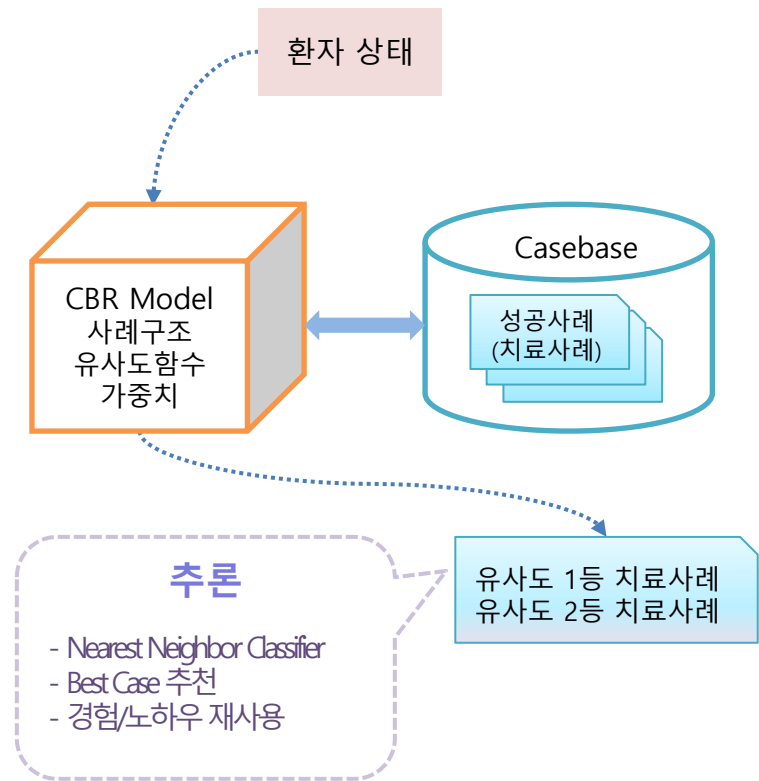
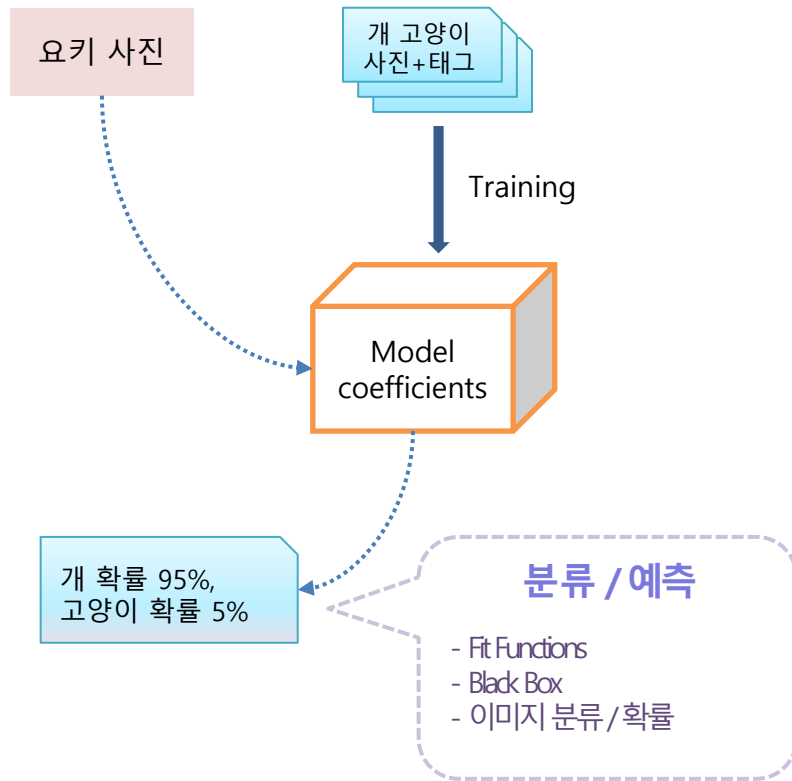
사람이 문제를 해결하기 위하여 추론하는 프로세스를 모델링 한 방법 (Bergmann)



CBR (Case-Based Reasoning, 사례기반추론)



DL vs CBR



Quiz DL/CBR/Rules?

1. Health Status Prediction

6개월후 건강상태예측

2. My Home Finder

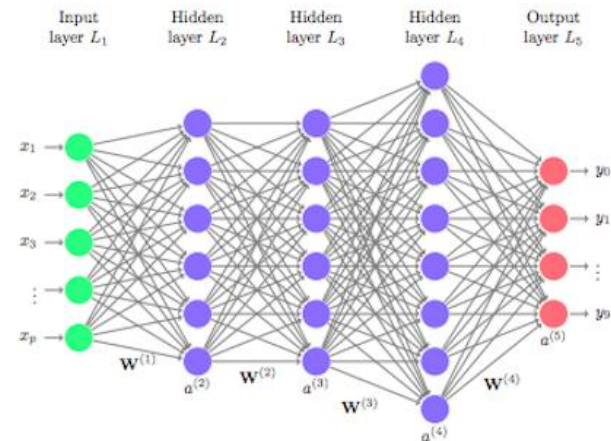
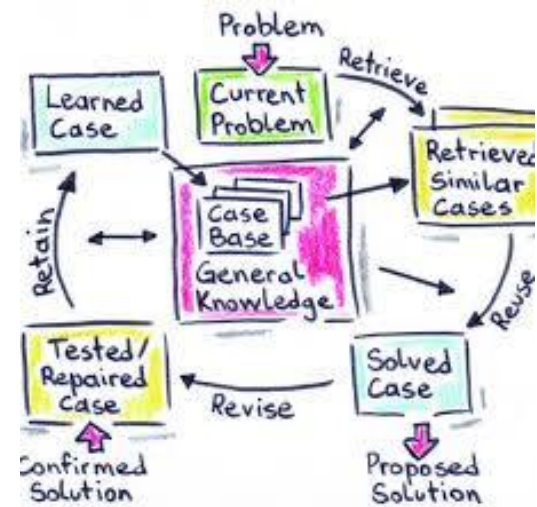
스마트직방

3. Cancer Detection & Treatment

암 조기발견 및 치료


4. Metabolic Syndrome Detection

대사증후군판정



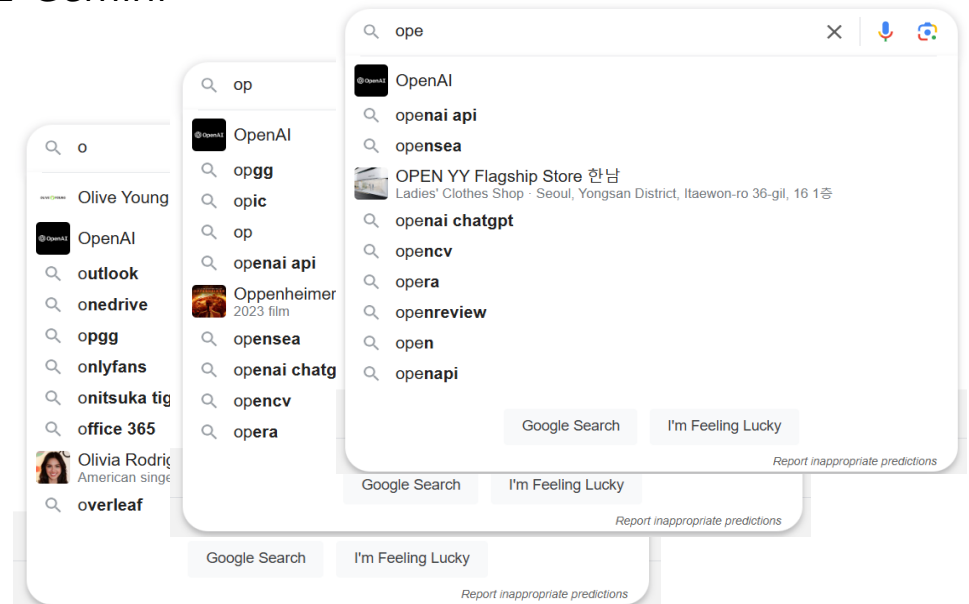
LLM (Large Language Model)

- Why is so Shocking?

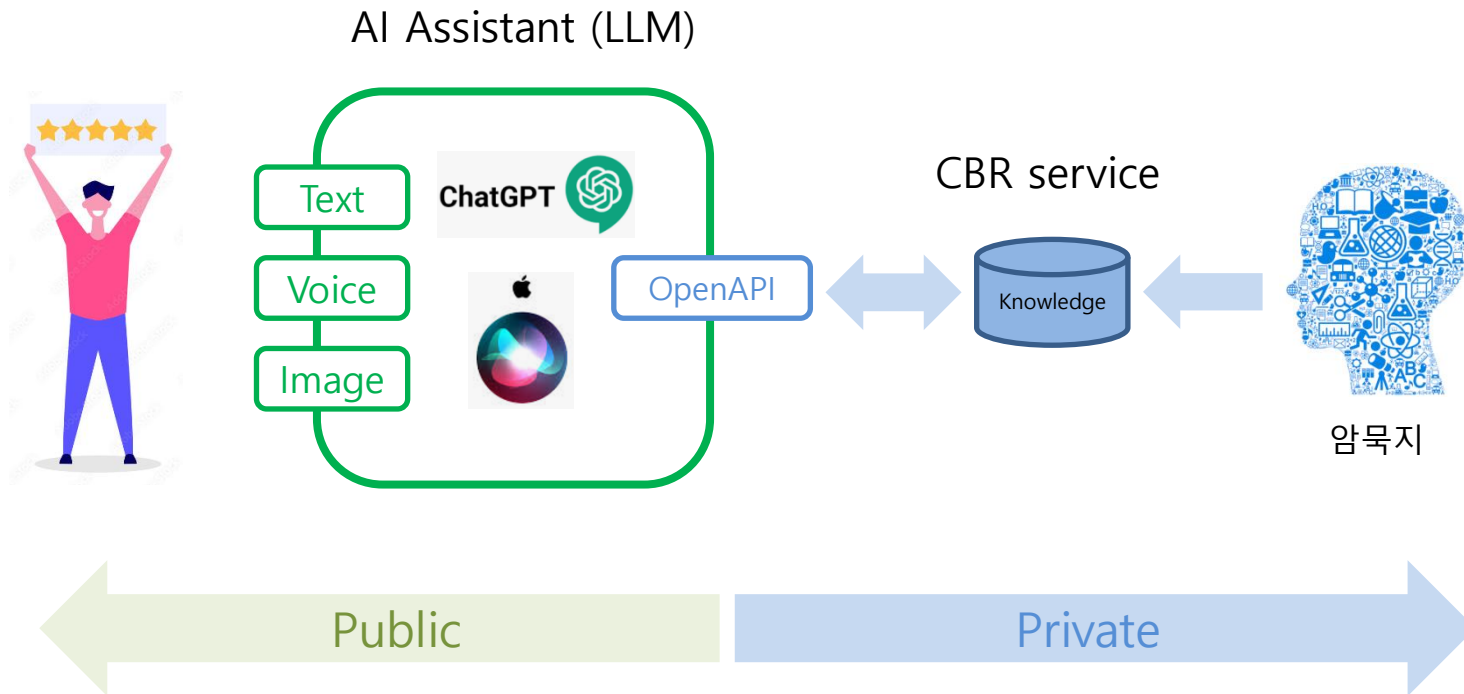
- 2022.11 OpenAI  ChatGPT
 - GPT → Transformer/Pre-Trained/Generative
 - Chat → Reinforcement Learning
 - Huge Parameters & Training Data & Human Feedback
- 2023.03 Google Bard → 2023.12 Gemini
- [ChatGPT vs Gemini](#)
- [Open Source LLMs](#) – Meta Llama



- Threat or Opportunity?



Opportunities



CBR Solutions

