

# AI and Deep Learning

(Lecture 1)

Yung-Cheol BYUN, Jeju National Univ.

“AI 비서 아마존 알렉사와 MS 코르타나, 연말부터 대화(8.31)”

“4차산업혁명의 핵심, AI와 빅데이터에 1조 2천억원 투입  
(8.29)”

“과학기술정보통신부 유장관, 4차산업혁명위 내달 출범(8.29)”

“중국의 AI 굴기, 2030년 전분야서 미국 제치고 세계 1위 야심  
(7.24)”

“인간 따돌린 AI(페이스북) 챗봇 끼리의 대화(7.24)”

“아마존 창고, AI 로봇이 초당 50건씩 배송처리(7.24)”

“AI 의사가 환자 24시간 관리하는 시대 온다(7.6).”

# Agenda

- Artificial Intelligence
- Brain and Neurons
- 학습이란(Learning)?
- 회귀(Regression)
- Deep Neural Networks
- CNN
- RNN
- 비지도학습(Unsupervised Learning)
- 강화학습(Reinforcement Learning)
- AI Applications



# Python & TensorFlow

# Intelligence?



- One's **capability** for logic, understanding, self-awareness, **learning**, planning, creativity, and problem solving
- The **ability** to **perceive** information, and to **retain** it as knowledge to be **applied** towards adaptive behaviors within an environment

# Artificial Intelligence

- Intelligence exhibited by machines
- A computerized version of the human intelligence
- Theory and development of computer systems able to perform tasks such as visual perception, voice recognition, decision-making, and translation between languages



Google Photos

# Assistant

- 검색 (얼굴, 장소, 사물, ...)
- 오늘의 재발견
- 앨범, 콜라주
- 무비, 애니메이션



# Voice Recognition

Text Message  
Memo, Diary



EVERNOTE





SoundHound

# Many Applications

- Translation
- Recommendation  
(Facebook, Amazon,  
Netflix...)
- and so on

작년, AI에서의  
획기적인 **사건**

4th

Industrial Revolution

# @WEF, Davos

WORLD  
ECONOMIC  
FORUM

COMMITTED TO  
IMPROVING THE STATE  
OF THE WORLD



Source: WEF



AlphaGo



Lee Sedol







# Google DeepMind Challenge Match

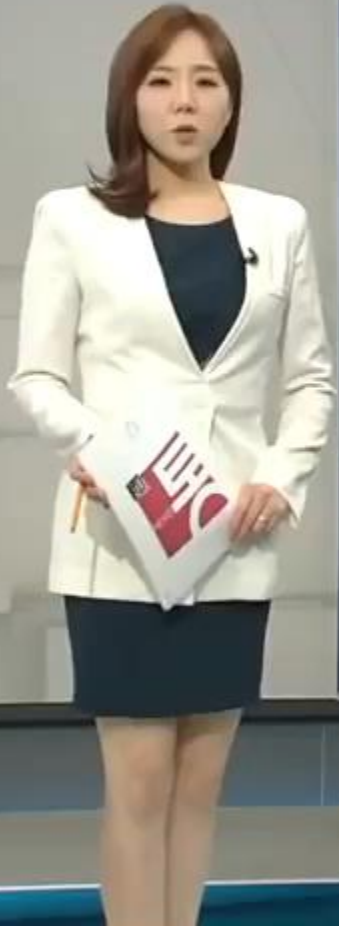
R - 15 March 2016



AL PHANT  
00:00:54

LEO SIEGA  
00:01:00







Demis Hassabis, CEO of Google DeepMind

# AlphaGo

already retired but can  
be extended to cover  
general problems easily.

# The Core of 4<sup>th</sup> Industrial Revolution

Intelligent

Products/Project

# Home Assistant 1

**amazon** echo



Echo Dot (**Alexa** inside)

컴퓨터가 잘하는 것,  
사람이 잘하는 것



Now,  
machines **do better**  
than human  
in almost areas

How can machines  
get AI?