COMP 472: Artificial Intelligence Introduction
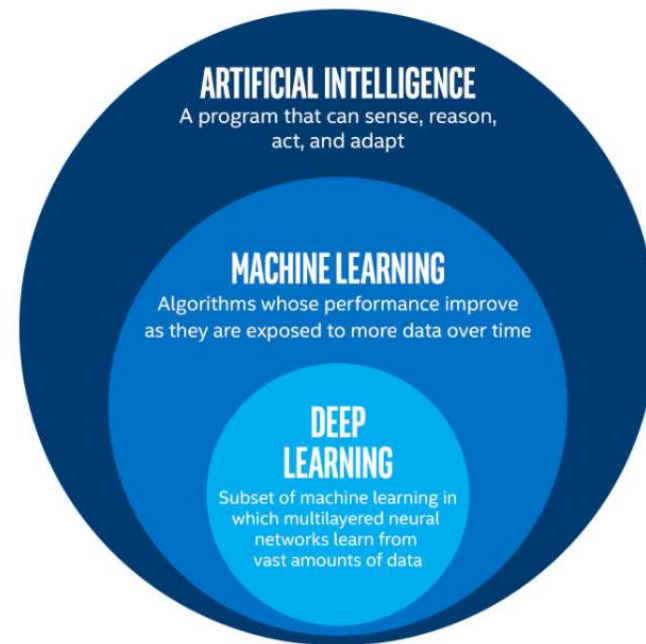# Intro to AI

- Russell & Norvig, chap. 1 & 27

Today

1. Introduction to AI
2. Intelligence & the Turing Test
   a) What is artificial intelligence?
   b) What is intelligence?
   c) The Turing Test
3. What do we do in AI?
4. History of AI

Introduction to AI

- AI vs ML vs DL

ARTIFICIAL INTELLIGENCE
A program that can sense, reason, act, and adapt

MACHINE LEARNING
Algorithms whose performance improve as they are exposed to more data over time

DEEP LEARNING
Subset of machine learning in which multilayered neural networks learn from vast amounts of data

- Major breakthroughs in many AI topics
- Thanks to a technique called Deep Learning

https://towardsdatascience.com/cousins-of-artificial-intelligence-dda4edc27b55

Recent Breakthroughs

- **Speech Recognition & Machine Translation (2010+)**
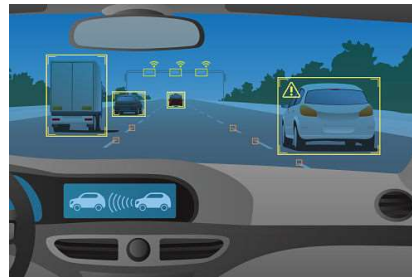

- Google now

- Google Translate

- Skype Translator

- Image Recognition & Computer Vision (2012+)
- Natural Language Processing (2014+)
- …

Recent Breakthroughs

- Speech Recognition & Machine Translation (2010+)
- **Image Recognition & Computer Vision (2012+)**

- Object recognition
- Self driving cars

- Airport Screening

- Natural Language Processing (2014+)
- ...

Recent Breakthroughs

- Speech Recognition & Machine Translation (2010+)
- Image Recognition & Computer Vision (2012+)
- **Natural Language Processing (2014+)**

Joe went to the kitchen. Fred went to the kitchen. Joe picked up the milk.
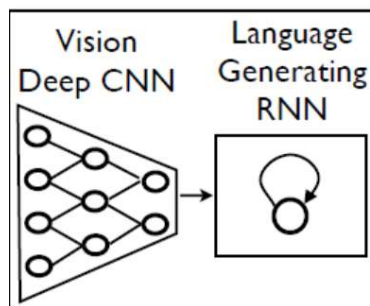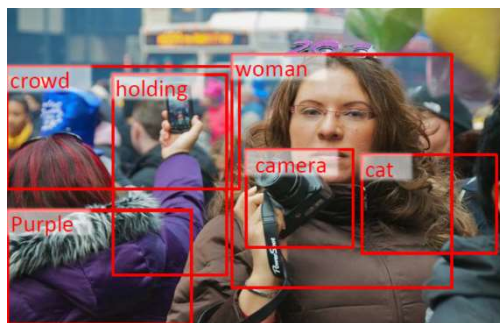Joe travelled to the office. Joe left the milk. Joe went to the bathroom.
Where is the milk now? A: office
Where is Joe? A: bathroom
Where was Joe before the office? A: kitchen   http://blog.csdn.net/qfnu_cjt_wl

- *Question Answering*
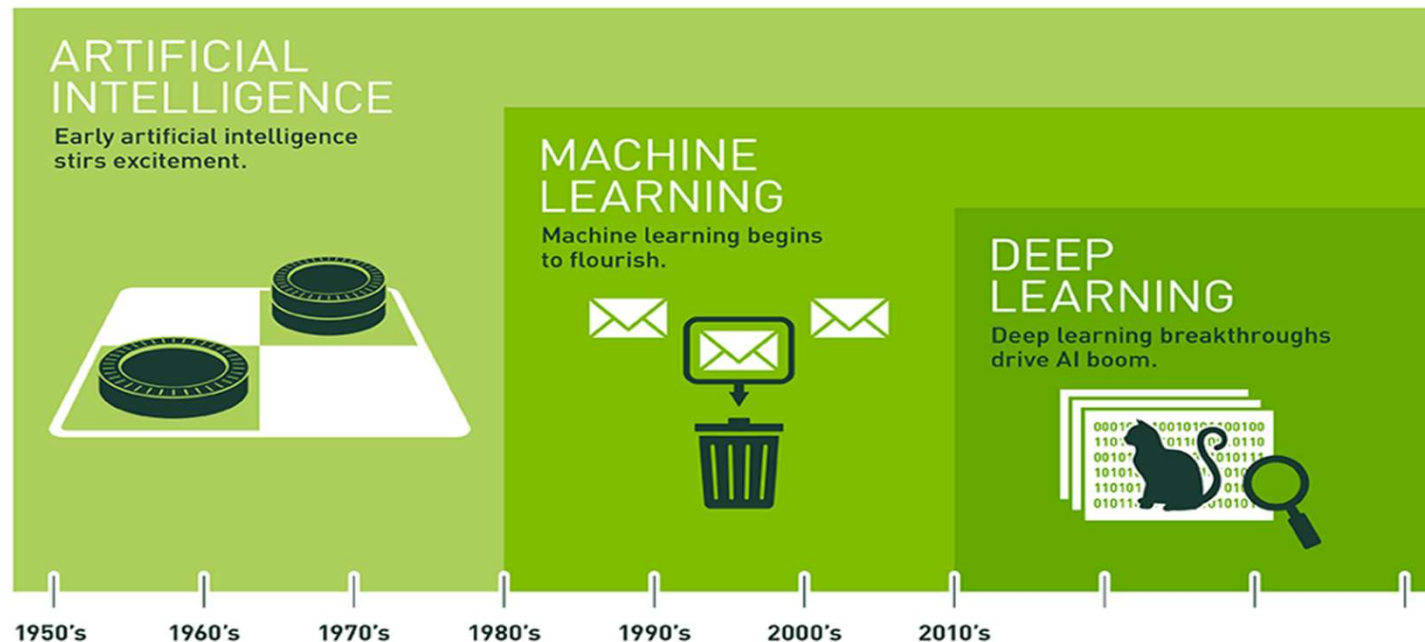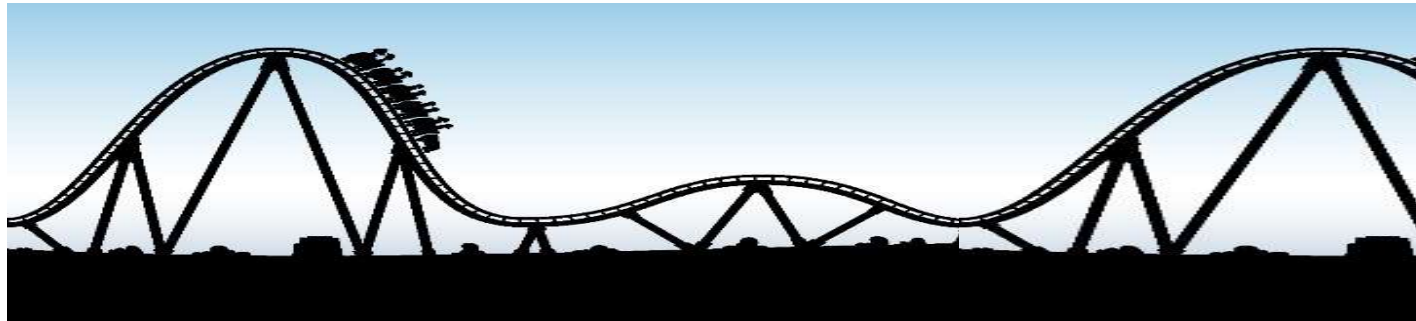

- *Image Captioning (deep vision + deep NLP)*

Machine-generated (but turker prefered)	a bicycle is parked next to a river
Human-annotated (but turker not prefered)	a bike sits parked next to a body of water

Figures from Yoshua Bengio, 2015

History of AI

Today

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Up Next

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