



Overview of Artificial Intelligence

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History of AI



- | 1950: “Computing Machinery and Intelligence”
- | 1956: “Dartmouth Summer Research Project on Artificial Intelligence”
- | 1966 - 1993: AI Winter
- | 1987 - present: General increase in statistical approaches → return of neural networks → computation capabilities increased
- | What can AI do now?

What AI is Capable Of?



| Which of the following is AI capable of at present?

- Play chess
- Drive safely
- Play table tennis
- Prove a mathematical theorem
- Make a one-hour conversation with a human
- Translate spoken English to Japanese in real time

Goals of AI



- | **Knowledge Representation and Reasoning**
 - Natural Language Processing
- | **Machine Learning**
- | **Computer Vision**
- | **Automated Planning and Scheduling**
 - Robotics
- | **Artificial General Intelligence**

Goals of AI

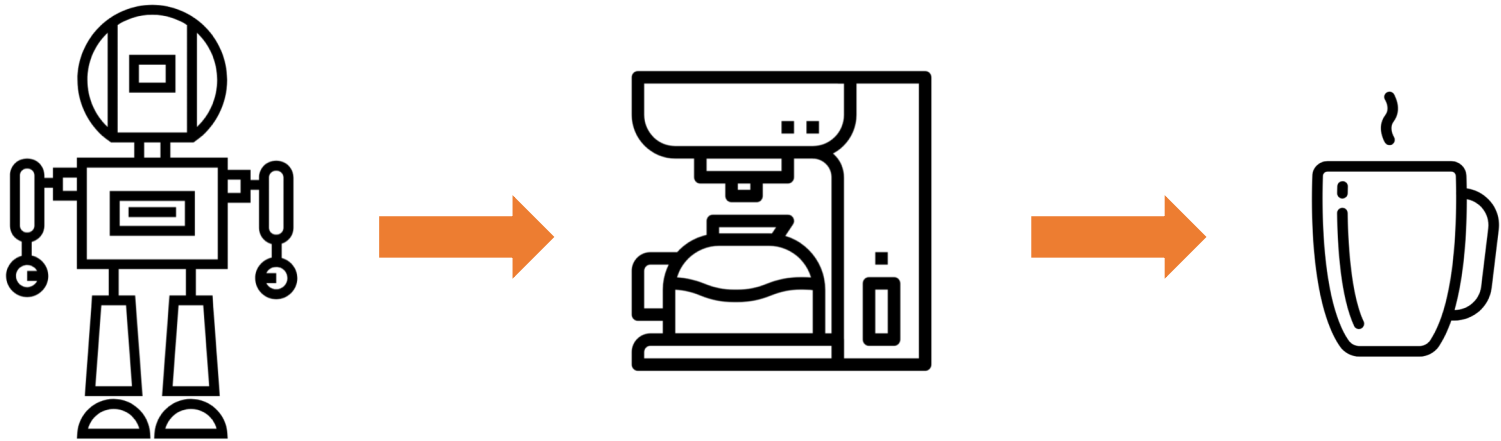


| John McCarthy: “I think the best hope for human-level AI is **logical AI**, based on the formalizing of **commonsense knowledge** and **reasoning in mathematical logic**”

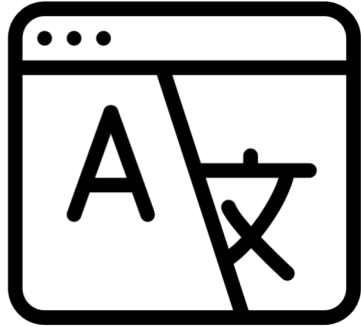
– The Future of AI — A Manifesto (2006)

What is AI?

- | The study of **intelligent behavior** achieved through **computational means**
 - Think rationally vs. think like humans
 - Act rationally vs. act like humans
- | **Coffee Test (Wozniak)**



AI Fields and AI Applications



Natural language understanding

- Speech technologies
- Language processing
- Web searches

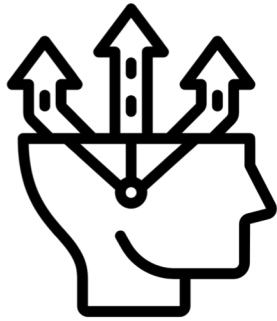


Autonomous driving

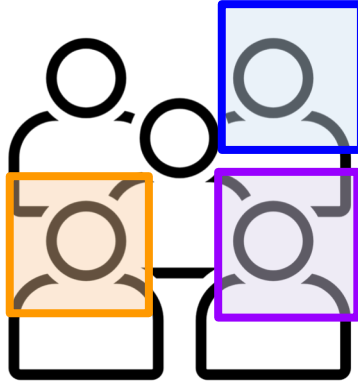


Game playing

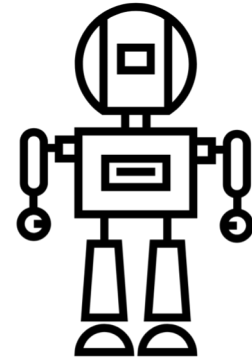
AI Fields and AI Applications



| **Decision
making**



| **Vision**



| **Robotics**

Summary



- | **Definition of AI**
- | **History of AI**
- | **Capabilities of AI**
- | **Goals of AI**
- | **AI applications**