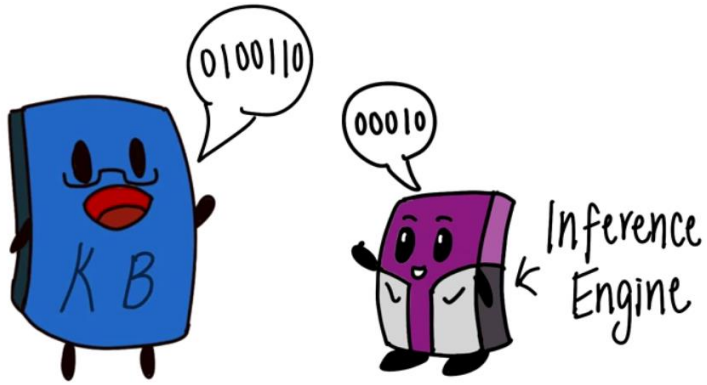
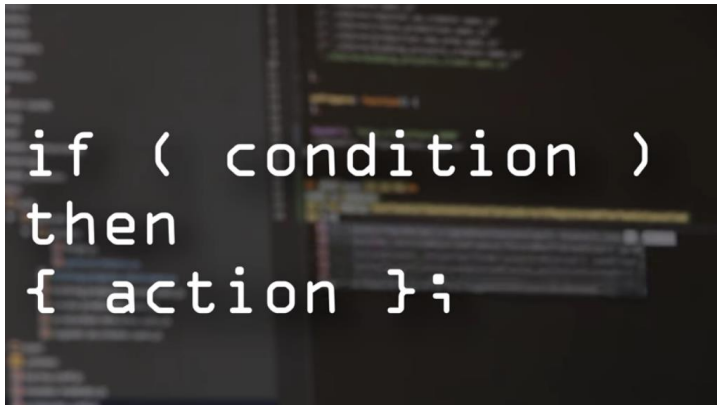
20IS603 Architecture of Intelligent Systems

Introduction to Intelligent systems

Intelligent Techniques

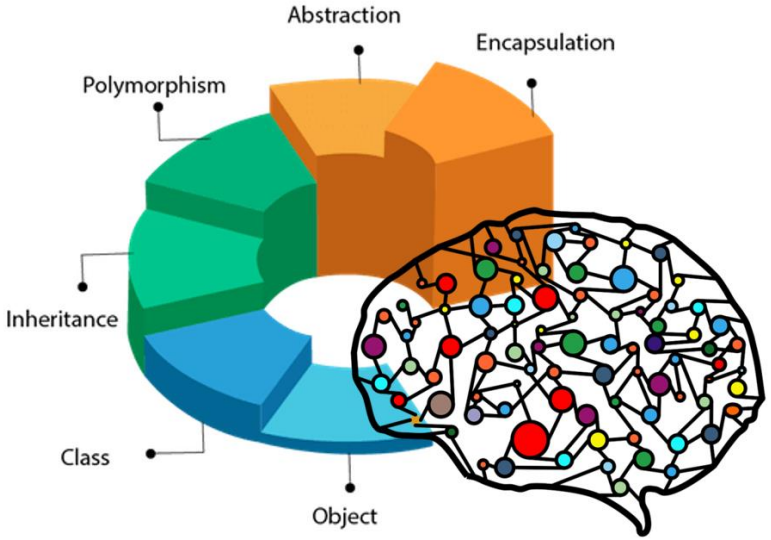


Expert systems

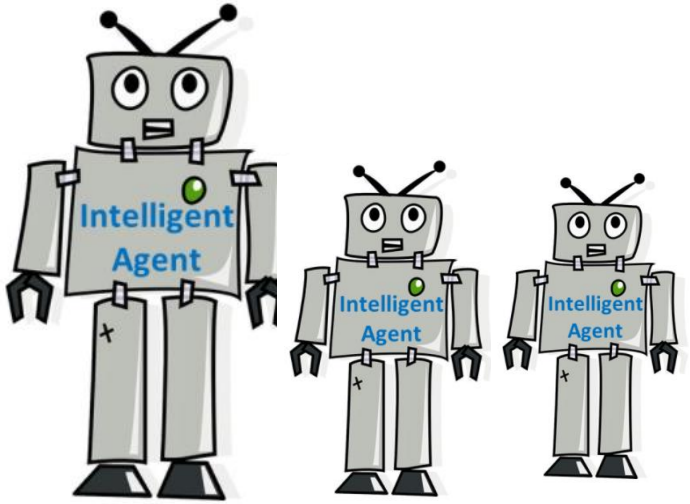


Rule-based systems

Fuzzy based systems



Object-oriented systems



Intelligent agents

Genetic Algorithms

A spectrum of intelligence

- expertise
- planning
- adaptability
- interaction
- language
- common sense
- vision / perception
- coordination
- regulation
- reaction

level of understanding

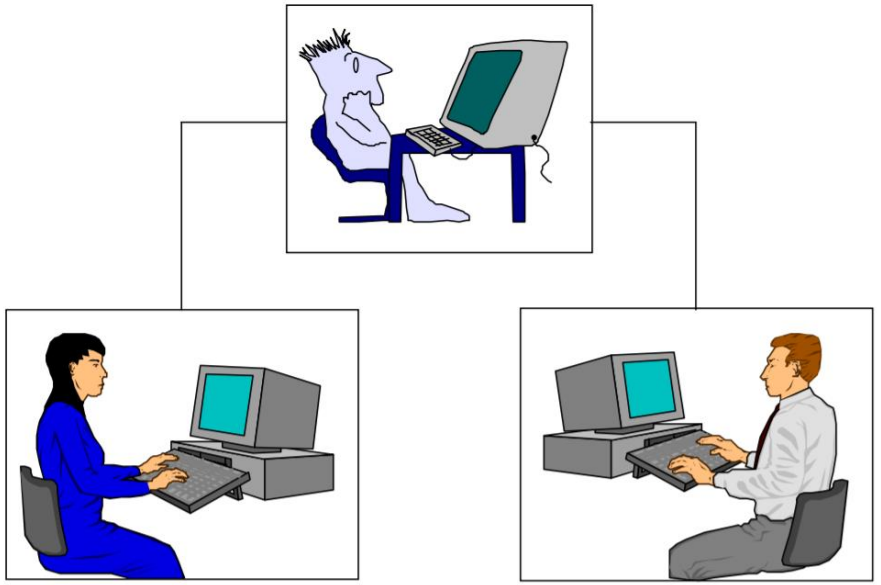
Perception

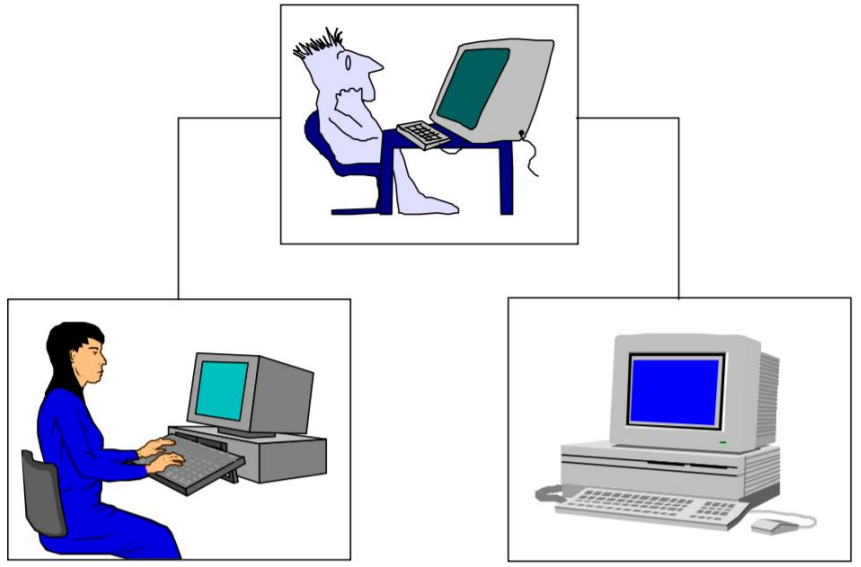
Perception

Context

History of AI

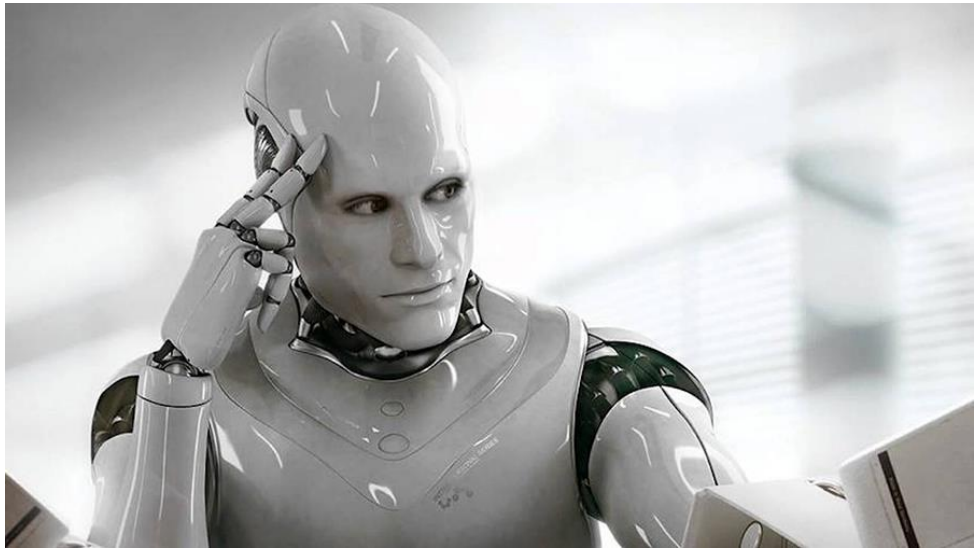
- Turing Imitation game
- John McCarthy - Dartmouth Conference





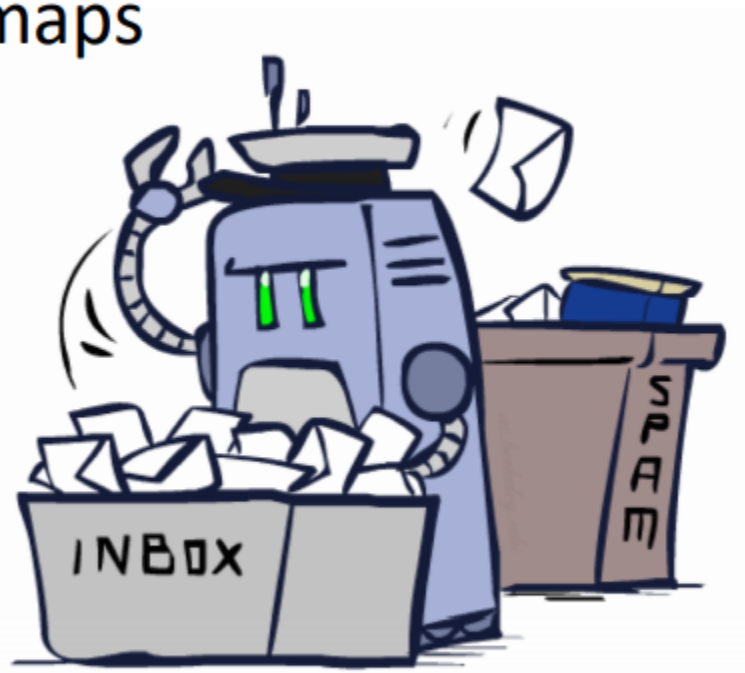
Why AI?

- Maturing ideas
- Lots of data
- Deep learning
- Internet resources
- Faster computers



Decision making

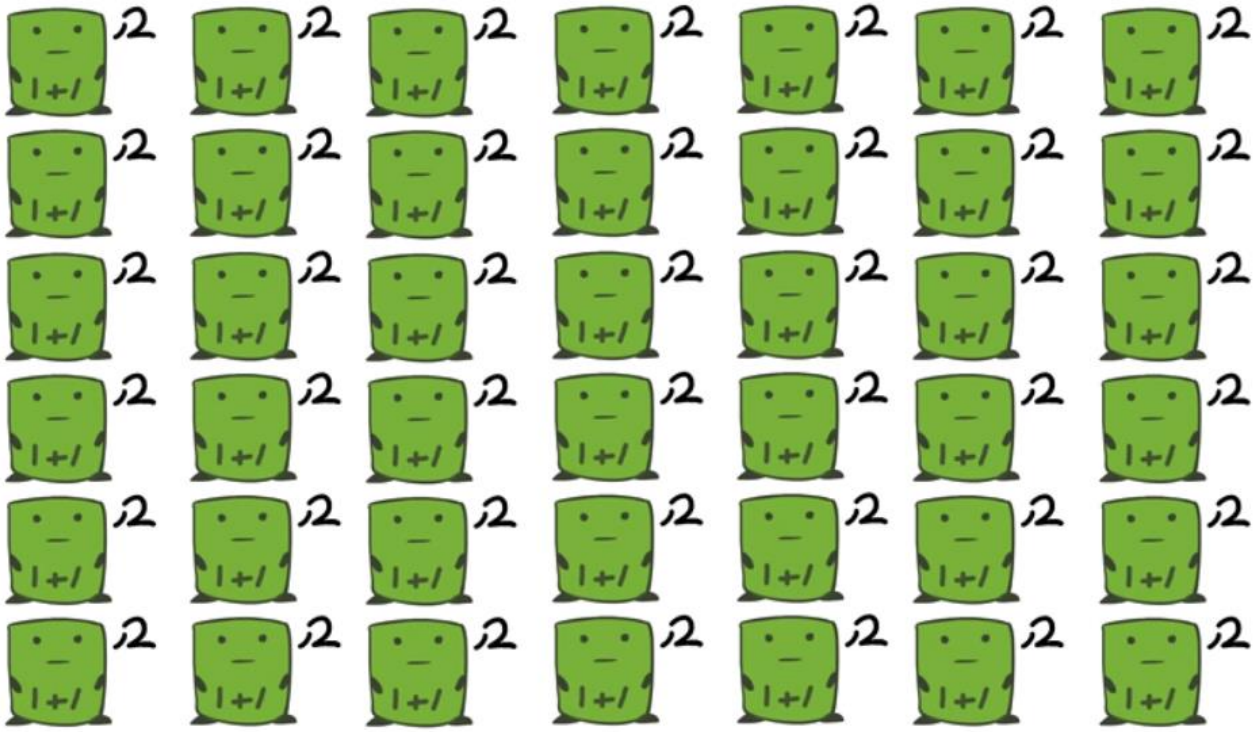
- Scheduling, e.g. airline routing, military
- Route planning, e.g. Google maps
- Medical diagnosis
- Web search engines
- Spam classifiers
- Automated help desks
- Fraud detection
- Product recommendations
- … Lots more!

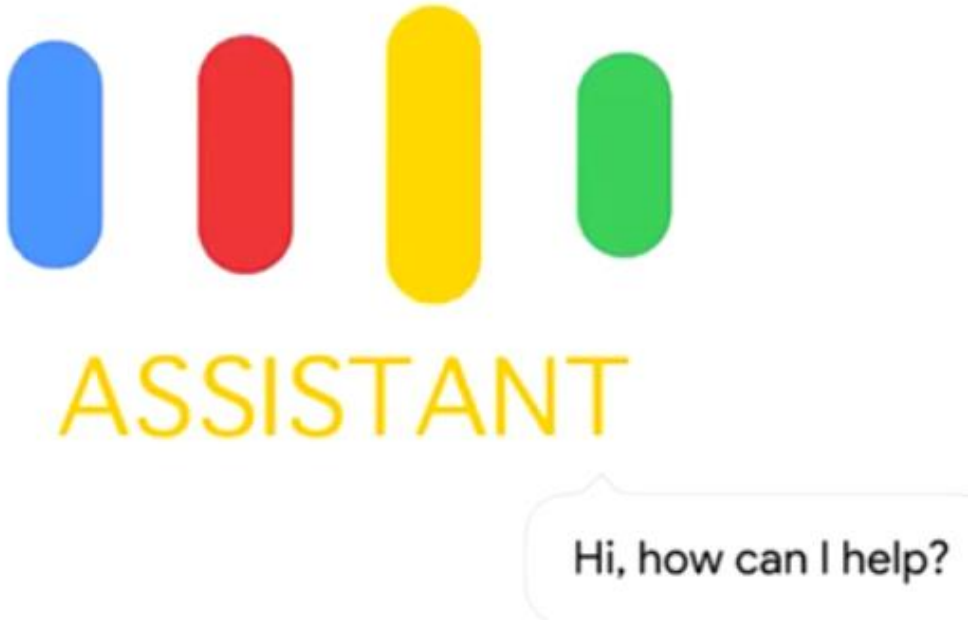


AI Considerations

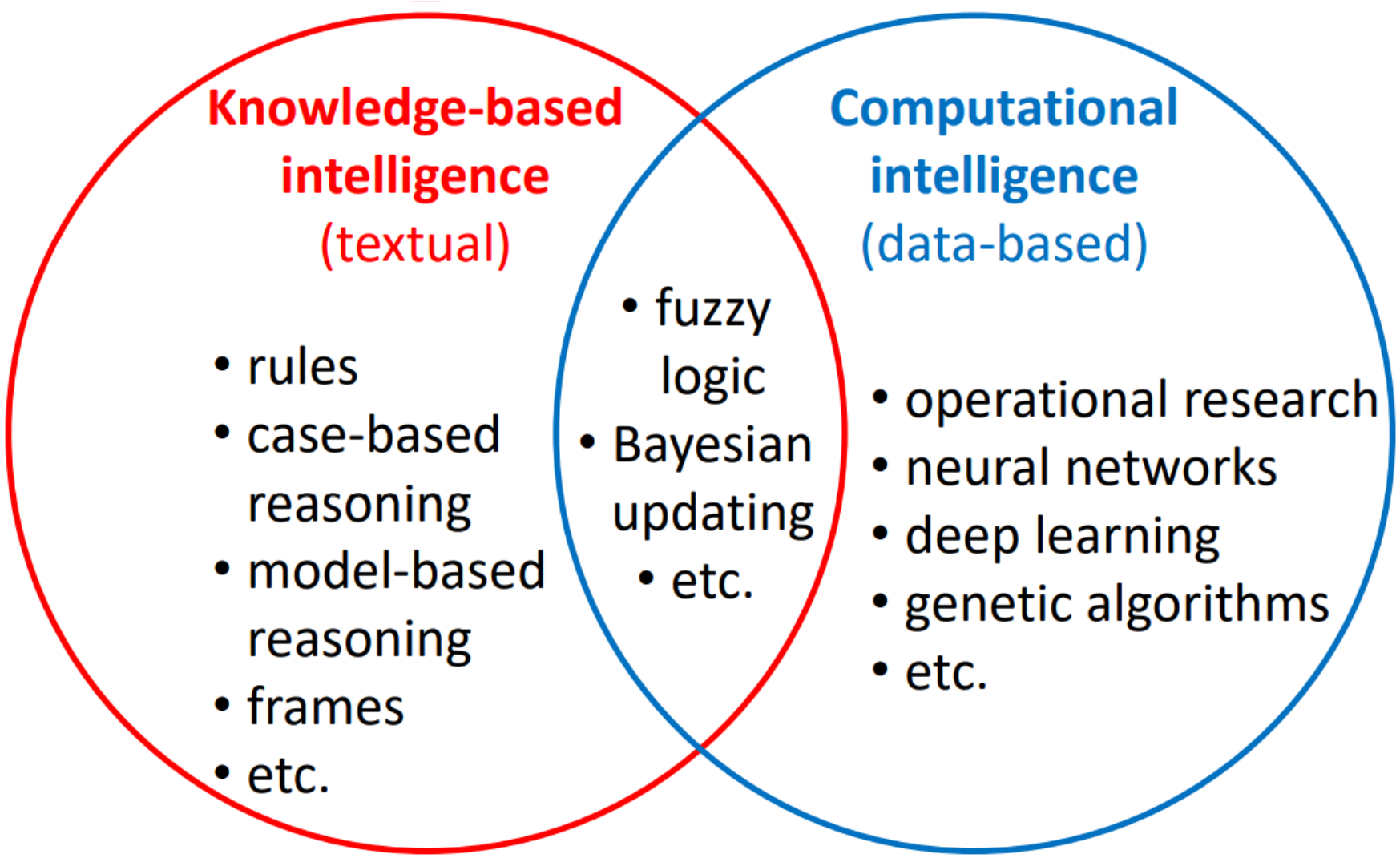
- What's it for?
  - Decision-making / autonomy
  - Recommendations / advice
  - Processing / analysis
- Trust
  - Understanding how it works
  - Explainablity
  - Context / assumptions
- Constraints
  - Legal
  - Ethical
  - Practical
  - Data

How to categorize Intelligent Systems





Two families of AI



Thank you