

What is artificial intelligence (AI)

- Artificial intelligence (AI) solves difficult problems intelligently
- AI system = intelligent algorithm + software + hardware
- Since artificial intelligence solves difficult problems intelligently, it may appear to be human like
- Artificial intelligence does not necessarily try to mimic humans or build humans

Subject areas in artificial intelligence

- Problem solving - solving puzzles
- Logical reasoning - reasoning using mathematical logic
- Planning - making plans and executing them
- Decision making - making decisions
- Reasoning under uncertainty - dealing with uncertainty
- Machine learning - learning from past examples
- Neural networks - learning that "mimics" neural system
- Deep learning - sophisticated neural networks
- Generative AI - creating text, image, video
- Natural language processing - processing human language
- Computer vision - processing visual information
- Robotics - designing robots and related algorithms
- Many others

Subjects related to artificial intelligence

- Computer science
- Mathematics
- Engineering
- Statistics

- Biology
- Psychology
- Economics
- Linguistics
- Other disciplines

History of artificial intelligence

- 1950's - 1980's - beginnings, search methods, game playing, logical reasoning, planning methods, knowledge based systems, other subjects
- 1990's - 2020's - reasoning under uncertainty, neural networks, machine learning, data mining, robotics, computer vision, language processing, deep learning, other subjects

Applications of artificial intelligence

- Board games
- Robotics
- Autonomous vehicles
- Data mining
- Image analysis
- Speech recognition
- Virtual assistants
- Content creation
- Recommender systems
- Expert systems
- Logistics planning
- Many more applications