

Al-Hamdaniya University

College of Education

Computer Science

Stage: 3rd



Artificial Intelligence (AI)

- **What is Artificial Intelligence?**

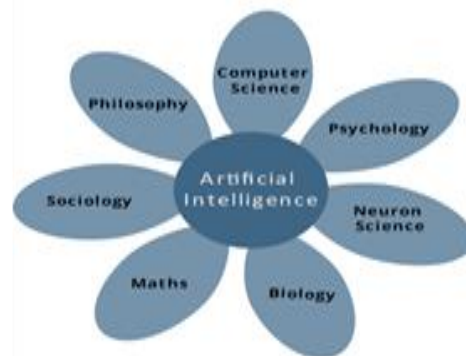
Artificial intelligence is the science of making machines that can think like humans. It can do things that are considered "smart." AI technology can process large amounts of data in ways, unlike humans. The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

- **Goals of AI**

- **To Create Expert Systems:** The systems which exhibit intelligent behavior, learn, demonstrate, explain, and advice its users.
- **To Implement Human Intelligence in Machines:** Creating systems that understand, think, learn, and behave like humans.

- **What Contributes to AI?**

Artificial intelligence is a technology based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, and Engineering. A major thrust of AI is in the development of computer functions associated with human intelligence, such as reasoning, learning, and problem solving.



- **AI Applications**

- **AI in healthcare**

The biggest bets are on improving patient outcomes and reducing costs. Companies are applying machine learning to make better and faster medical diagnoses than humans. One of the best-known healthcare technologies is IBM Watson. It understands natural language and can respond to questions asked of it.

- **AI in business**

AI algorithms are being integrated into analytics and customer relationship management (CRM) platforms to uncover information on how to better serve customers. Chatbots have been incorporated into websites to provide immediate service to customers.

- **AI in Education**

AI-powered algorithms can gather data on student behavior, such as how long they spend on certain tasks, what types of questions they struggle with, and how they interact with learning materials. This data can be used to identify patterns and trends that can help improve teaching methods and curriculum design.

- **AI in Law**

Using AI to help automate the legal industry's labor-intensive processes is saving time and improving client service. Law firms use machine learning to describe data and predict outcomes, computer vision to classify and extract information from documents, and NLP to interpret requests for information.

- **AI in Finance**

AI in finance helps drive insights for data analytics, performance measurement, predictions and forecasting, real-time calculations, customer servicing, and intelligent data retrieval.

- **AI in Entertainment and media**

The entertainment business uses AI techniques for targeted advertising, recommending content, distribution, detecting fraud, creating scripts and making movies.
- **AI in Security**

AI can provide alerts to new and emerging attacks much sooner than human employees and previous technology iterations. By analyzing data and using logic to identify similarities to known malicious code.
- **AI in Transportation**

In addition to AI's fundamental role in operating autonomous vehicles, AI technologies are used in transportation to manage traffic, predict flight delays, and make ocean shipping safer and more efficient.
- **What are the advantages and disadvantages of AI?**
 - **Advantages:**
 - **Eliminates human error and risk**

Using AI to complete particularly difficult or dangerous tasks can help prevent the risk of injury or harm to humans.
 - **24/7 availability**

AI programs are available at all times, whereas humans work 8 hours a day. Machines can work all through the day and night, and AI-powered technique can provide customer service even during off-hours. This can help companies to produce more and provide a better customer experience than humans could provide alone.
 - **Repetitive jobs**

Using an AI program can save humans from the boredom of repetitive tasks, and save their energy for work that requires energy that is more creative.

- **Cost reduction**

As we addressed above, AI can work around the clock, creating more value in the same day as a human worker. In addition, since AI can help to take over manual and tedious tasks, it frees up workers for higher-skilled tasks.

- **Disadvantages:**

- **Expensive**

It requires plenty of time and resources and can cost a huge deal of money. AI also needs to operate on the latest hardware and software to stay updated and meet the latest requirements, thus making it quite costly.

- **Lack of emotion and creativity**

The lack of creativity means AI cannot create new solutions to problems in any field. AI it can be programmed to create “novel” ideas, but not original ones. For example, if a company is looking for a new or creative solution to a problem, humans are better capable of providing that solution.

- **Reduced jobs for humans**

As AI becomes more commonplace at companies, it may decrease available jobs, since AI can easily handle repetitive tasks that were previously done by workers.

- **Ethical problems**

One of the most common ethical problems people cite is concerns around consumer data privacy. AI is good at recognizing patterns, it can gather data on people even without direct access to personal information.

- **No improvement with experience**

AI cannot naturally learn from its own experience and mistakes. Humans do this by nature, trying not to repeat the same mistakes over and over again.