

computer networking

software engineering

algorithms

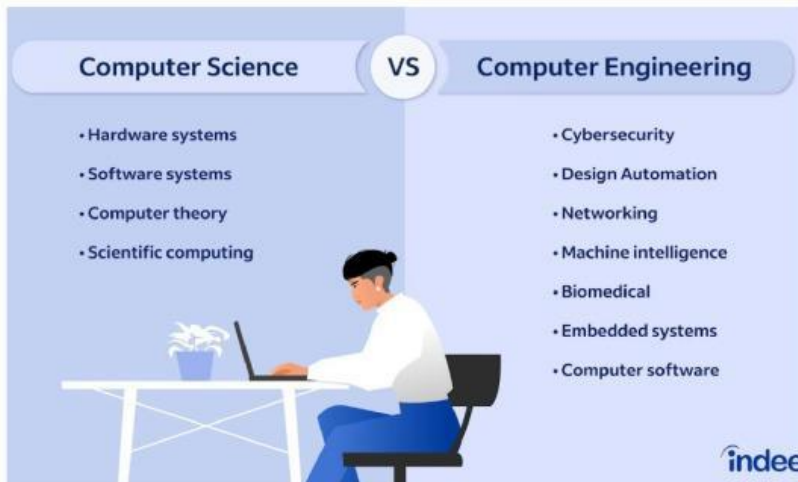
digital signal processing

analysis

artificial intelligence

fault-tolerant computer system

Read the text about Computer Engineering.



What Is Computer Engineering?

Computer engineering is a field that combines technology and innovation. One important area is **computer networking**, where engineers design systems that connect computers and allow them to share information quickly and safely. Without networking, there would be no internet or communication between devices.

Another major part of computer engineering is **software engineering**. Software engineers create the programs and applications we use every day, from

simple games to complex banking systems. They must plan carefully and test everything they build.

Digital signal processing is also crucial. It helps computers change sounds, images, and videos into digital data that can be stored, improved, or shared. Without it, smartphones and music players wouldn't work properly.

In computer engineering, **algorithms** play a key role. An algorithm is a list of steps that tells a computer how to solve a problem. Engineers must write clear and efficient algorithms for everything from searches on Google to finding the best route on a map.

Good **analysis** is important too. Engineers study problems in detail and find the best solutions before building new systems or software.

Artificial intelligence (AI) is one of the most exciting areas today. AI allows computers to learn from experience and make decisions, like helping a car drive itself or recommending a movie you might like.

Finally, engineers often design a **fault-tolerant computer system**. This means creating systems that can keep working even if some parts fail, which is very important for hospitals, airplanes, and banking systems.

Computer engineering touches almost every part of modern life and continues to shape the future!

Task 1. Read the statements. Write T (True), F (False), or NM (Not Mentioned):

- _____ Computer networking allows computers to share information with each other.
- _____ Software engineers never test the programs they create.
- _____ Digital signal processing helps in changing physical signals into digital data.
- _____ Algorithms are used only in video games.
- _____ Analysis helps engineers understand problems before finding solutions.
- _____ Artificial intelligence can recommend movies to users.
- _____ Fault-tolerant systems are important for places like hospitals and banks.
- _____ Computer engineers usually work alone without any teamwork.
- _____ Without digital signal processing, smartphones would not function properly.
- _____ Artificial intelligence is more important than computer networking.

Task 2: Match the Words to Their Definitions:

Term	Meaning
1. Algorithms	a) Studying and solving problems using computer programs
2. Artificial intelligence	b) Connecting computers so they can share information
3. Software engineering	c) Using computers to think or act like a human
4. Analysis	d) Solving a problem step by step
5. Computer networking	e) Studying data carefully to understand something
6. Digital signal processing	f) Making a system that keeps working even when something breaks
7. Fault-tolerant computer system	g) Changing signals (like sound or images) into a digital format

Task 3: Use the correct word from the task 2 to complete the sentence:

1. The development of _____ has allowed computers and devices worldwide to communicate instantly and efficiently.
2. In _____, specialists must follow detailed steps to design, test, and improve software products for various industries.
3. _____ is essential for converting sounds and images into a form that computers can process and manipulate.
4. Without precise _____, it would be impossible for search engines to quickly find relevant information across billions of websites.
5. Careful _____ of system requirements is necessary before starting any large technological project.
6. Thanks to advances in _____, machines today can recognize speech, play chess, and even drive cars without human help.
7. A _____ is designed to continue functioning correctly even when unexpected errors or failures occur within the system.

Task 4: Match the words from the left box to the words in the right box to form collocations. Then match the parts of the sentences correctly.

solve	find	programs	a problem	solutions
make	digital signal	networking	analysis	
computer	store	software	digital data	
efficient	keep	algorithms	decisions	
create	improve	working	processing	

1. Software developers must store	a) algorithms safely when using cloud services.
2. Good programmers often find	b) programs even when the issue is very complex.
3. When solving technical problems, you need to solve	c) digital data that is easy to use and secure.
4. Artificial intelligence must improve	d) decisions based on the needs.
5. Engineers design systems to keep	e) software based on data and learning.
6. Skilled engineers can create	f) solutions to add new features and fix bugs.
7. It is important to write	g) a problem quickly and effectively.
8. Before designing a new system, it is important to make	h) working even during technical issues.

Task 5: Watch the video and do the test.

1. What inspired the first speaker to study Electrical & Computer Engineering?

- A) Love for playing video games.
- B) Passion for writing stories.
- C) Interest in how things work and solving problems.

2. What does the first speaker say about the future of technology?

- A) It will grow and improve lives.
- B) It will stay the same.
- C) It will disappear.

3. Why did the second speaker choose Electrical & Computer Engineering?

- A) To become an artist.
- B) Because of a strong interest in computers and programming.
- C) Because of a family tradition.

4. What project does the second speaker mention working on?

- A) A robot for competitions.
- B) A mobile app.
- C) A cooking website.

5. What is important for the third speaker when studying Electrical & Computer Engineering?

- A) Making a lot of friends.
- B) Creativity and thinking in new ways.
- C) Being the fastest student in class.