

Computer Engineering

CAREER PROFILE

What is computer engineering?

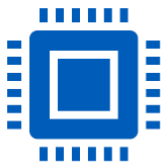
Computer engineering started as a specialization of electrical engineering but quickly became its own branch grounded in the theories and principles of computing, mathematics, science, and engineering. It blends many aspects of computer science with electrical engineering to develop and integrate the hardware (physical circuits) and software (computer programs) components of modern computing systems and computer-controlled equipment including sensors, robotics, computer networks, and machine learning/AI systems.



WHAT IS COMPUTER ENGINEERING?



What do computer engineers do?



Computer engineers work in many industries, including computing, aerospace, telecommunications, power generation, manufacturing, defense, and electronics. They design devices from tiny integrated circuits and microprocessors to whole systems like telecommunications networks. Specific devices and systems include:

- Consumer electronics like TVs, microwaves, and gaming consoles
- Laptops and desktops
- Cellular/mobile phones and wearables
- Many of the devices needed to make the internet work, including servers
- Embedded sensing and control systems needed in aircraft, spacecraft, cars, (especially driverless cars), and automated factories

WHAT DO COMPUTER ENGINEERS DO?



How do you become a computer engineer?

Physics and especially mathematics are essential subjects to take and excel in at school. If your school or community offers coding classes or camps, you should definitely try and attend these. At university or college, you will need to take computer science courses as well to graduate with a computer engineering degree. Depending on where you study, there will be different specializations that you can pursue as an undergraduate or graduate student or young professional. Learn more by watching the video called *So You Want to Be a COMPUTER ENGINEER* (11:32).

Here are some general tips for choosing a university or college:

- Make sure the program is **fully accredited** locally and/or internationally.
- Choose an institution that offers a **broad computer engineering program** so that you can sample as many of the sub-disciplines as possible to find the best fit for you.

TYPICAL EMPLOYERS

Typical employers include large private companies and research organizations:

- General Electric
- Technology start-ups
- Computing companies like Google and Apple
- Automotive companies like Tesla
- Consumer product companies like Samsung



- Consider accredited engineering programs offered by **technical or community colleges**.

What are the careers prospects for a computer engineer?

We live in a highly digitized world increasingly dependent on computing technologies and systems. Therefore, computer engineers are highly sought after in a wide variety of industries. In most parts of the world, they are **highly valued and very well paid**.

Meet some computer engineers

Watch the following videos to meet some inspiring computer engineers.

JOSIAH HESTER

Josiah Hester, a professor of Computer Engineering at Northwestern University explains some of the incredible devices he is working on



CARLOS GARCIA

Carlos is a computer engineer focussing on building applications for a large retailer to help them keep track of stock.



SUCHISMITA PAL

Suchismita works at Intel developing graphics hardware devices that meet the needs of Intel's customers.

