Editorial

# MAJOR CONCEPTS ON COMPUTER ENGINEERING

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## EDITORIAL

Computer engineering is a branch of engineering, which integrates the various fields of computer science and electronic engineering required for the development of computer hardware and software. Computer engineers usually have a background in electronic engineering. Computer engineers are involved in many hardware and software aspects of computing, from the design of individual microcontrollers and microprocessors, personal computers and supercomputers to circuit design. This field of engineering is not only concerned with the way computer systems work, but also how they fit into the larger picture. Computer engineers include writing software and firmware for embedded microcontrollers, designing VLSI chips, designing analog sensors, designing mixed-signal circuit boards, and designing operating systems. Computer engineers are also very suitable for robotics research, which relies heavily on the use of digital systems to control and monitor electrical systems such as motors, communications, and sensors. In many higher education institutions, computer engineering students can choose the field of in-depth study in their juniors and seniors, because the full breadth of knowledge used in computer design and application is beyond the scope of a bachelor's degree. Other institutions may require engineering students to complete one to two years of general engineering before declaring computer engineering as their main focus.

## COMPUTER HARDWARE

Computer hardware consists of the bodily elements of a laptop, together with the case significant processing unit, monitor, mouse, keyboard, laptop information storage, images card, sound card, audio system and motherboard. By contrast, software program is the set of commands that may be saved and run *via* way of means of hardware. Hardware is so-termed as it is "hard" or inflexible with admire to changes, while software program is "soft" as it is simple to change. Hardware is commonly directed *via* way of means of the software program to execute any command or instruction. A aggregate of hardware and software program bureaucracy a usable computing system, even though different structures exist with simplest hardware.

## COMPUTER SOFTWARE

Software is a group of commands and records that inform a pc the way to work. This is in evaluation to hardware, from which the machine is constructed and in reality plays the work. In pc technological know-how and software program engineering, software program is all records processed with the aid of using pc systems, together with packages and records. Software consists of packages, libraries and associated non-executable records, together with on line documentation or virtual media. Software and hardware require every different and neither may be realistically used on their own. At the bottom programming degree, executable code includes device language commands supported with the aid of using an character processor-generally a valuable processing unit or a pix processing unit. Machine language includes agencies of binary values signifying processor commands that extrade the nation of the pc from its previous nation. For example, a coaching might also additionally extrade the price saved in a specific garage vicinity withinside the pc-an impact that isn't at once observable to the user.