

Exploring the Evolution and Recent Trends in Computer Architecture

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Commentary

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DESCRIPTION

Computer architecture is the study of the design and organization of computer systems. It encompasses everything from the hardware components that make up a computer system to the software that runs on it. Computer architecture is an important field of study because it directly affects the performance, efficiency, and functionality of computer systems.

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History of computer architecture

Computer architecture has its roots in the early days of computing, with the first electronic computers being developed in the 1940s. At that time, computer systems were large and expensive, and were primarily used for scientific and military applications [1]. Over time, computer systems became smaller, more affordable, and more widely used, leading to the development of personal computers in the 1980s.

The history of computer architecture can be traced back to the earliest days of computing, when machines were built to perform specific tasks, such as calculating mathematical tables. The development of the first electronic computers in the 1940s and 1950s marked a significant milestone in the field of computer architecture. These early computers used vacuum tubes and relays to perform calculations and were limited in their performance and functionality.

The invention of the transistor in the late 1940s and the subsequent development of integrated circuits in the 1960s revolutionized computer architecture. These innovations allowed for the development of smaller, faster, and more reliable computers, which could be used in a wider range of applications.

In the 1970s, the development of microprocessors marked another significant milestone in computer architecture. Microprocessors allowed for the integration of all the components of a computer onto a single chip, which significantly reduced the size and cost of computers [2]. This led to the development of personal computers, which became widely available in the 1980s and 1990s.

Since then, computer architecture has continued to evolve to meet the needs of modern computing applications. The development of multicore processors, the use of GPUs for general-purpose computing, and the growing interest in quantum computing are just a few examples of the recent trends in computer architecture.

Key components of computer architecture

There are several key components of computer architecture, including the Central Processing Unit (CPU), memory, Input/Output (I/O) devices, and storage. The CPU is the "brain" of the computer, and is responsible for executing instructions and performing calculations. Memory is used to store data and instructions that are currently being used by the CPU [3-6]. I/O devices are used to interact with the computer, such as through a keyboard or mouse, and storage devices are used to store data and programs for long-term use.

Recent trends in computer architecture

Recent trends in computer architecture include the development of multicore processors, which allow multiple CPUs to work together to perform tasks more efficiently. Another trend is the use of Graphics Processing Units (GPUs) for general-purpose computing, which can significantly improve performance for certain types of applications. Additionally, there is a growing interest in the development of quantum computers, which use quantum mechanics to perform calculations and could potentially revolutionize computing as we know it.

CONCLUSION

Computer architecture is a vital field of study that directly affects the performance, efficiency, and functionality of computer systems. Its history can be traced back to the early days of computing, and it has evolved significantly over time to meet the needs of modern computing applications. Recent trends in computer architecture, such as the development of multicore processors and the use of GPUs for general-purpose computing, show that this field will continue to evolve and innovate in the years to come.

The history of computer architecture is a fascinating journey that has seen significant innovations and advancements over the years. From the early days of computing to the development of personal computers and modern computing applications, computer architecture has played a vital role in shaping the way we interact with technology.

REFERENCES

1. John LH, et al. 2006. Computer Architecture: A Quantitative Approach .Morgan Kaufmann.
2. Robert S, et al. Functional Design of Computers. Communications of the ACM. 1961;4-405.
3. Barton, et al. A New Approach to the Functional Design of a Digital Computer. Annals of the History of Computing.1987; 11-15.
4. Gordon C, et al. Computer Structures: Readings and Examples. McGraw-Hill.1971.
5. Blaauw GA,et al. The Structure of System/360, Part I-Outline of the Logical Structure. IBM Syst J.1964;3:119-135.
6. Andrew S, et al. Structured Computer Organization.1979.