

A Descriptive Study on Interconnection Networks for Parallel Computing and Algorithm Models in Parallel Computing

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Abstract: *In parallel computing, Interconnection networks are very crucial for efficient communication among all processors within a similar system.*

Parallel computing has become a crucial topic in the concern of computer science and also it is revealed to be critical when researching in high performance. The evolution of computer architectures towards an improved number of nodes, where parallelism could be the approach to option for speeding up an algorithm within the last few decades.

Efficient data transfer between processors is an essential component in any large scale parallel computation. Motivated by the growing interest in parallel computers, a significant amount of theoretical research has been devoted to the area of interconnection networks for parallel computers, most of it to the packet routing (or store-and-forward) model of communication. We survey some of the major developments in this field, and discuss several new alternative models of communication, In many large scale applications, communication time dominates the execution time of the whole parallel computation. Thus, the performance of a large scale parallel computer is highly correlated with the efficiency of its network and communication algorithm.

The combination of processing units build a model of computation (circuits) has gained an essential place in the area of high performance computing (HPC) due to its configuration and considerable processing supremacy that is parallel, series, etc. The aim of the Presenting this paper is study on the idea of parallel computing and its programming models and also explore some theoretical and technical concepts which can be often needed to understand the Interconnection network. In particular, we show how this technology is new in assisting the field of computational physics, especially when the issue is data parallel.

In the real-life example of parallel computing, there are two queues to get a ticket of anything; if two cashiers are giving tickets to 2 persons simultaneously, it helps to save time as well as reduce complexity.

Keywords: parallel computing