STA 3180 Statistical Modelling: Parallel Computing

Lecture Notes on Parallel Computing for STA 3180 Statistical Modelling

Introduction

Parallel computing is a form of computation in which many calculations or the execution of processes are carried out simultaneously. It is used to speed up the execution of a program by dividing the workload among multiple processors or computers. By utilizing multiple cores, processors, and computers, parallel computing can significantly reduce the time it takes to complete a task.

Key Concepts

* **Parallelism:** Parallelism is the simultaneous execution of multiple tasks. It is the key concept behind parallel computing.

* **Multi-core Processors:** Multi-core processors are processors that contain two or more independent processing units (cores) on a single chip.

* **Distributed Computing:** Distributed computing is a type of parallel computing in which tasks are divided among multiple computers connected via a network.

* **GPGPU:** GPGPU (General Purpose Graphics Processing Unit) is a type of parallel computing that uses a graphics processing unit (GPU) to perform general purpose computations.

Definitions

* **Parallel Computing:** Parallel computing is a form of computation in which many calculations or the execution of processes are carried out simultaneously.

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Practice Multiple Choice Questions

Q1. What is the key concept behind parallel computing?

A. Parallelism

B. Multi-core processors

C. Distributed computing

D. GPGPU

Answer: A. Parallelism