

19 Lecture - CS501

Important Subjective

1. **What is Pipelined SRC and how does it work?**

Answer: Pipelined SRC is an algorithm used for computing certain types of matrix operations. It works by breaking down a matrix into smaller sub-matrices and computing them in parallel pipelines, allowing for faster computation times.

What are some applications of Pipelined SRC?

Answer: Pipelined SRC is commonly used in applications such as signal processing, machine learning, and scientific computing.

What is the significance of pipelining in Pipelined SRC?

Answer: Pipelining allows for faster computation times by computing sub-matrices in parallel.

What is pipeline depth in Pipelined SRC?

Answer: Pipeline depth refers to the number of pipeline stages used in the algorithm.

What are some challenges in implementing Pipelined SRC?

Answer: Some challenges include pipeline hazards and instruction reordering.

How does Pipelined SRC compare to other matrix computation algorithms?

Answer: Pipelined SRC can provide faster computation times for certain types of matrix operations, but may not be suitable for all types of computations.

What is the role of sub-matrix size in Pipelined SRC?

Answer: The sub-matrix size can affect the computation time and accuracy of the algorithm.

How does Pipelined SRC handle matrix data that does not fit in memory?

Answer: Pipelined SRC can be designed to work with external memory or a disk-based system.

How does the number of computational units used in Pipelined SRC affect performance?

Answer: The number of computational units used can affect the parallelism and throughput of the algorithm.

How can Pipelined SRC be optimized for specific hardware architectures?

Answer: Pipelined SRC can be optimized by adjusting pipeline depth, sub-matrix size, and the number of computational units to match the characteristics of the hardware architecture.