**CA实验报告-516030910293-姚子航**

**Lab** **I: Benchmarking**

## 1.3 What's your L1 data cache miss rate? **A:L1 data cache miss rate为0.3919**

## 1.4 What's your average memory fetch latency? A:**平均的访存延迟为227**

## 1.5 Name several characteristic of BFS based on your results, such as cache, memory and instructions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **L1D total cache**  **miss rate** | **L1I total data**  **miss rate** | **Average memory**  **fetch latency** | **simulation rate**  **(cycle/sec)** |
| **BFS** | 0.3919 | 0.0136 | 227 | 2132 |
| **gaussian** | 0.4545 | 0.1732 | 162 | 4155 |
| **myocyte** | 0.4915 | 0.1060 | 141 | 7015 |
| **lud** | 0.6162 | 0.0264 | 335 | 3947 |

从表中可以看出，BFS的data miss rate较低，说明数据局部性比较好，instruction miss rate相比其他workload也非常低，说明其指令重复执行较多，局部性较好；但是BFS的访存时延相比其他workload较高，只比lud要低；但其模拟速率和**gaussian、myocyte、lud**比都比较小，说明其代码执行比较耗时。

**Lab** **II: Schedule policy**

## 2.3 What is the runtime, simulation rate (cycle/sec) for each configuration?

|  |  |  |  |
| --- | --- | --- | --- |
| **Algorithm** | **Simulation rate (cycle/sec)** | **Simulation-rate (inst/sec)** | **Runtime (sec)** |
| **LRR** | 3343 | 335134 | 20 |
| **TL** | 4201 | 418918 | 16 |
| **GTO** | 4102 | 418918 | 16 |

## 2.4 L1 cache miss rate & memory fetch latency

|  |  |  |
| --- | --- | --- |
| **Algorithm** | **L1 data cache miss rate** | **Average memory fetch latency** |
| **LRR** | 0.5680 | 253 |
| **TL** | 0.5680 | 252 |
| **GTO** | 0.5680 | 251 |

**Lab** **III: Exploration with AerialVersion**

**DRAM channel efficiency** **warp divergence breakdown**

