

Current

Result579 - gradient_kernel

Size(120, 68, 1)x(16, 16, 1)

Time2.83 ms

Cycles4,159,762

GPU0 - NVIDIA GeForce GTX 1660 Ti

SM Frequency1.47 Ghz

Process[11724] image

Attributes

SummaryDetailsSourceContextCommentsRawSession

CompareToolsViewExport

This table shows all results in the report. Use the column headers to sort the results in this report. Double-click a result to see detailed metrics. Double-click on demangled names to rename it.

ID	Estimated Speedup [%]	Function Name	Demangled Name	Duration [ms] (6.45 ms)	Runtime Improvement [ms] (4.27 ms)	Compute Throughput [%]	Memory Throughput [%]	# Registers [regi
3	53.06	gradient_kernel	gradient_kernel(flo...	2.83	1.50	87.15	7.58	
4	63.03	edge_kernel	edge_kernel.char..	0.18	0.11	28.70	36.97	
5	18.21	thresholding_kernel	thresholding_kernel	0.00	0.00	22.00	51.66	

The following performance optimization opportunities were discovered for this result. Follow the rule links to see more context on the Details page.
Note: Speedup estimates provide upper bounds for the optimization potential of a kernel assuming its overall algorithmic structure is kept unchanged.

- [FP64/32 Utilization](#)
Est. Speedup: 53.06%

The ratio of peak float (fp32) to double (fp64) performance on this device is 32:1. The workload achieved close to 1% of this device's fp32 peak performance and 36% of its fp64 peak performance. If [Compute Workload Analysis](#) determines that this workload is fp64 bound, consider using 32-bit precision floating point operations to improve its performance. See the [Kernel Profiling Guide](#) for more details on roofline analysis.
- [Uncoalesced Global Accesses](#)
Est. Speedup: 15.09%

This kernel has uncoalesced global accesses resulting in a total of 4850502 excessive sectors (28% of the total 17323883 sectors). Check the L2 Theoretical Sectors Global Excessive table for the primary source locations. The [CUDA Programming Guide](#) has additional information on reducing uncoalesced device memory accesses.
- [FP64 Non-Fused Instructions](#)
Est. Speedup: 14.55%

This kernel executes 1807680 fused and 903840 non-fused FP64 instructions. By converting pairs of non-fused instructions to their [fused](#), higher-throughput equivalent, the achieved FP64 performance could be increased by up to 17% (relative to its current performance). Check the Source page to identify where this kernel executes FP64 instructions.