| | Result | Size | Time | Cycles | GPU | SM Frequency | Process | Attributes |
|---|---|---|---|---|---|---|---|---|
| Current | 576 - convolveHorizontalKernel | (20, 15, 1)x(16, 16, 1) | 6.75 us | 5,212 | 0 - NVIDIA GeForce RTX 3070 Laptop GPU | 771.06 Mhz | [4596] example5 | |

Summary | Details | Source | Context | Comments | Raw | Session

Compare | Tools | View | Export

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 [us] (260.90 us) | Runtime Improvement [us] (130.45 us) | Compute Throughput [%] | Memory Throughput [%] | # Reg |
|---|---|---|---|---|---|---|---|---|
| **0** | 50.00 | **convolveHorizo...** | **convolveHorizo...** | 6.75 | 3.38 | 34.95 | 34.95 | |
| 1 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 6.94 | 3.47 | 33.81 | 33.81 | |
| 2 | 50.00 | convolveHorizonta... | convolveHorizonta... | 7.84 | 3.92 | 38.77 | 38.77 | |
| 3 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 8.64 | 4.32 | 33.53 | 33.53 | |
| 4 | 50.00 | convolveHorizonta... | convolveHorizonta... | 7.74 | 3.87 | 38.95 | 38.95 | |
| 5 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 8.67 | 4.34 | 33.00 | 33.00 | |
| 6 | 50.00 | featureStrengthCo... | featureStrengthCo... | 28.58 | 14.29 | 61.67 | 63.92 | |
| 7 | 50.00 | convolveHorizonta... | convolveHorizonta... | 6.78 | 3.39 | 34.53 | 34.53 | |
| 8 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 6.94 | 3.47 | 33.71 | 33.71 | |
| 9 | 50.00 | convolveHorizonta... | convolveHorizonta... | 11.87 | 5.94 | 60.85 | 60.85 | |
| 10 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 13.09 | 6.54 | 51.42 | 51.42 | |
| 11 | 50.00 | convolveHorizonta... | convolveHorizonta... | 7.74 | 3.87 | 38.48 | 38.48 | |
| 12 | 50.00 | convolveVerticalKe... | convolveVerticalKe... | 8.86 | 4.43 | 34.01 | 34.01 | |

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.*

**Tail Effect**
**Est. Speedup: 50.00%**

A wave of thread blocks is defined as the maximum number of blocks that can be executed in parallel on the target GPU. The number of blocks in a wave depends on the number of multiprocessors and the theoretical occupancy of the kernel. This kernel launch results in 1 full waves and a partial wave of 60 thread blocks. Under the assumption of a uniform execution duration of all thread blocks, this partial wave may account for up to 50.0% of the total runtime of this kernel. Try launching a grid with no partial wave. The overall impact of this tail effect also lessens with the number of full waves executed for a grid. See the Hardware Model description for more details on launch configurations.

▸ Key Performance Indicators

**L2 Slices Workload Imbalance** One or more L2 Slices have a much higher number of active cycles than the average number of active cycles. Maximum instance value is 16.58% above the average, while