1 Results

N	2D2D (ms)	Shared memory (ms)
2000	9.4	6.388
4000	33.365	25.098
8000	133.555	99.519

2 Discussion

The 2D2D implementation divides the matrix so that each thread is responsible for copying at most one element from the source matrix to the target matrix.

The shared memory implementation divides the matrix into square "chunks", where each block is responsible for a chunk, and each thread is responsible for a row of the chunk. First, the threads of each block copy rows of their chunk to shared memory. Once the entire chunk has been copied into shared memory (guaranteed via a `__syncthreads` barrier), each thread then copies a column of the chunk into its destination row in the target matrix.