Neural Network Optimisation

Input Size	Baseline NN	Tiling	SIMD	Reordered	Unrolled	Reorder+SIMD+Tiling
256	1.00x	1.93x	2.15x	1.35x	1.04x	4.82x
512	1.00x	2.21x	1.97x	2.13x	1.35x	8.63x
1024	1.00x	3.01x	2.53x	3.14x	1.49x	9.95x
2048	1.00x	3.79x	2.25x	3.48x	1.26x	13.84x

Table 1: Speedup factors over baseline for different matrix multiplication optimizations and combinations.

Inferences:

- Combined optimizations (Reordering + SIMD + Tiling) consistently achieve the highest speedup, showing that hybrid techniques provide synergistic benefits
- As input size increases,the benefit of combining was more pronunced.