**CS 521 ML & Compilers Spring 2025 – MP1**

**Student Name: Charlie Jyu**

**NetID: cbjyu2@illinois.edu**

**Part 1 CPU**

1.2) **Ablation Study:**

A graph with lines and numbers

AI-generated content may be incorrect.

***Insight:*** As the matrix size increases, the optimizations become more effective and their effects are more pronounced. However, on very small matrix sizes, or advanced optimizations such as o3 and o4 can get outperformed by simple optimizations such as o1 and o2 because the setup for these advanced optimizations is more expensive than the gains on small matrix operations.

1.3) **Scaling Study:**

***Insight:*** one paragraph describing the results above

**Part 2 GPU**

2.2) **Ablation Study:**

***Insight:*** one paragraph describing the results above

2.3) **Scaling Study:**

***Insight:*** one paragraph describing the results above

Additional resources used:

https://chatgpt.com/share/68bcb77d-d318-8009-90f6-91fe0b35248d

https://stackoverflow.com/questions/78739060/why-the-loop-order-influence-the-efficiency-of-code-in-gemm