COMP2006 Computer Organization

AVX Intrinsics Exercise Worksheet

# Exercise

Compare the performances of the dgemm function and the *AVX* optimized dgemm function in your computer.

Compile and run **dgemm\_avx.c** and **dgemm3.c**. Then, complete the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **CPU: i5-1135G7** | **Calculation time (seconds)** | | **Rate** |
| **Sizes of Matrices** | **DGEMM AVX** | **DGEMM** |
| *e.g. 160 x 160* | *0.007816* | *0.018260* | *0.43* |
| *512 x 512* | 0.079832 | 0.331062 | 0.24 |
| *640 x 640* | 0.111363 | 0.411927 | 0.27 |
| *960 x 960* | 0.448746 | 1.388834 | 0.32 |
| *1024 x 1024* | 1.377032 | 6.306996 | 0.22 |
| *1280 x 1280* | 3.961213 | 7.401802 | 0.54 |
| *1440 x 1440* | 3.636033 | 5.766427 | 0.63 |