**CS 475/575 -- Spring Quarter 2021**

**Project #0**

**Simple OpenMP Experiment**

**Name: Chun-Yu, Chen**

**E-mail: chench6@oregonstate.edu**

1. **Tell what machine you ran this on:**

OSU Engineering server (Linux system) : flip2

1. **What performance results did you get?**
2. **Condition:**

Numt = 1, size = 160000, numtries = 400

**Result:**

Using 1 threads

Peak Performance = 174.55 MegaMults/Sec

Average performance = 172.60 MegaMults/Sec

1. **Condition:**

Numt = 4, size = 160000, numtries = 400

**Result:**

Using 4 thread

Peak Performance = 679.49 MegaMults/Sec

Average performance = 667.14 MegaMults/Sec

1. **What was your 4-thread-to-one-thread speedup?**

S = 667.14 / 172.60 ≈ **3.86**

1. **If the 4-thread-to-one-thread speedup is less than 4.0, why do you think it is this way?**

There are several factors that probably influence the performance of a system like clock speed, number of cores, cache, architecture, and so on. In addition, CPU bound, Memory bound, and I/O bound do exist. All of them are potential factors that can affect the speedup. I think the most significant issue is Amdahl’s Law. There exists certain sequential portion.

1. **What was your Parallel Fraction, Fp?**

Fp = (4./3.)\*( 1. - (1./S) ) = **0.98**