**CS 406 Homework 4**

Veli Can Erdem

In the code a GPU kernel that calculates the sum of square of distances is implemented in \_\_global\_\_ void vector\_distance(...). This function calculates for a single test point and returns an array of distances to CPU. CPU then finds the minimum distance vector and then writes it to output[i].

While train\_data, test\_data are initialized as array[], dist array that returns the distances in GPU is initialized as cudaMallocHost, because it is copied multiple times to GPU.

The code can be compiled with nvcc veli\* -Xcompiler -fopenmp.

The total running time is 0.20 seconds and GPU time is 0.05 seconds. 0.045 seconds is used for the kernel vector\_distance(…).