

Writeup

March 12, 2021

1 This is the writeup for hw3

Carl (Using Google Coral Dev Board)

1.1 Problem 1

For part a, we only need to add a `time` function to time the loop. For Coral, it takes 83 seconds or more for a 500 steps loop ($k=500$).

For part b, to vectorize the loop, I multiply the position with the Laplace matrix and sum all terms up to get the Δu , then assign those values to `1U_` so it gets updated after each loop. The vectorization for $k=500$ takes 0.157 second, which is way shorter than the loop method.

1.2 Problem 2

I've been into a lot of trouble to get Tensorflow running on my hardware. The Bazel at the beginning is running well, then `./configure` the tensorflow gets the error saying there's something wrong with the bazel. So I reinstalled bazel but compiling always makes the hardware reboot and cannot complete. Unfortunately I still could not solve this issue so I tried using docker on my laptop to run the tensorflow. Then I fixed some parts of codes since the tf array is a little bit different with numpy's. It finally takes about 0.6 seconds... probably because my laptop does not contain a TPU and is not designed for machine learning. But I'll spend more time on building tensorflow from source on the Coral since it's essential for all homeworks and projects later.

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