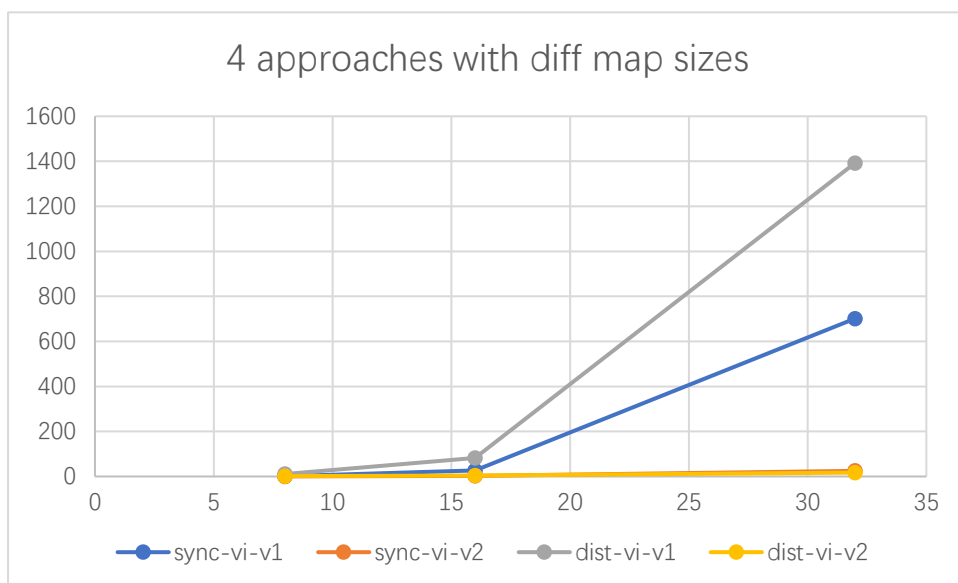CS533
HW2: Distributed Synchronous Value Iteration
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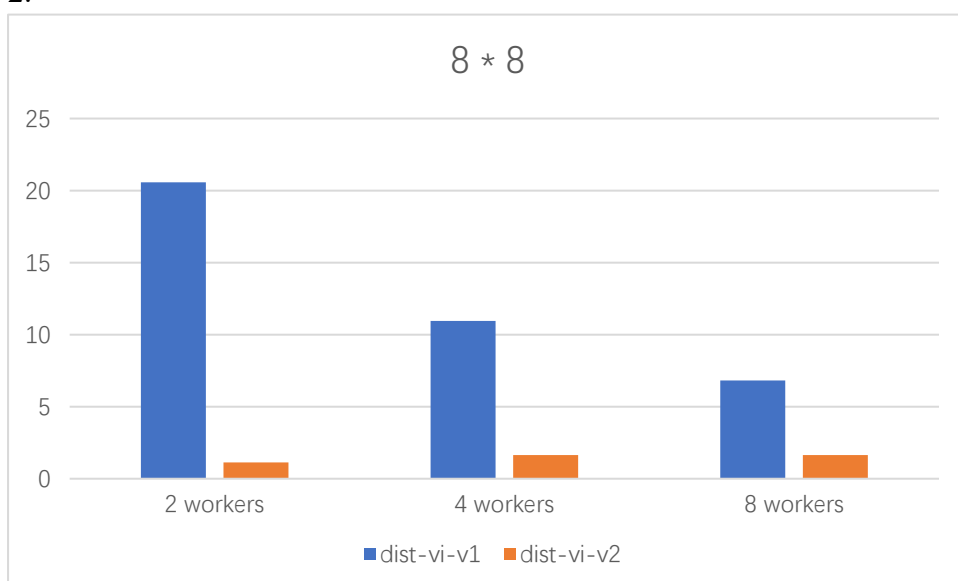Wenkai Wu; wuwenk@oregonstate.edu
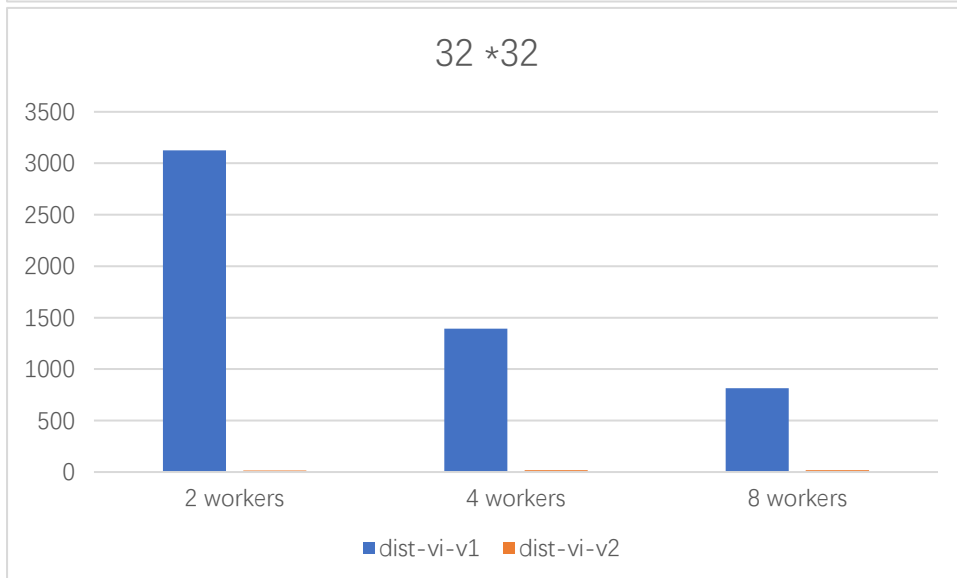
1.

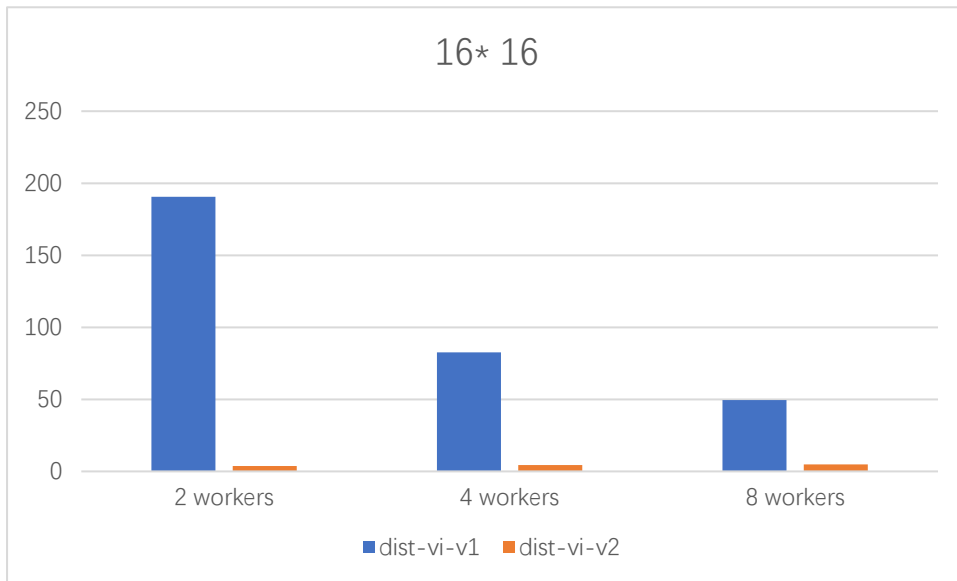|	Map size 8	Map size 16	Map size 32
sync-vi-v1	1.3059	27.32368	701.52679
sync-vi-v2	0.38804	2.56258	24.95231
dist-vi-v1	10.95833	82.51746	1392.60135
dist-vi-v2	1.651949	4.30523	17.14339

2.

16* 16

32 *32

3.

In the first distributed method, each worker would be assigned a task after they finish the previous one. This can be seen like we assign four (number of workers in the program) tasks to them in one loop and keep looping this process. In each loop, we need to keep "ray.get( )" to trace the work who has finished his job and assign a new one to him. This whole process is inefficient. On the other hand, in the second distributed method, we have separated all tasks (states) into four set. So, each worker may just do their set (in parallel). And, once all the sets are finished, "ray.get( )" the result and end the program.

4.

According to the result above, we can figure out that the advantage of distributed method is when the input data (number of state) is getting larger, its performance may have significant improvement. So, we think distributed method is better