

WARNING flwr 2024-03-24 11:19:41,728 | app.py:211 | Both server and strategy were provided, ignoring strategy

INFO flwr 2024-03-24 11:19:41,729 | app.py:178 | Starting Flower simulation, config: ServerConfig(num_rounds=5, round_timeout=None)

Data partitioned across 7 clients and 0.0 of local dataset reserved for validation.

FL experiment configured for 5 rounds with 7 client in the pool.

FL round will proceed with 100.0% of clients sampled, at least 1.

2024-03-24 11:19:46,464 INFO worker.py:1621 -- Started a local Ray instance.

INFO flwr 2024-03-24 11:19:48,300 | app.py:213 | Flower VCE: Ray initialized with resources: {'memory': 4637243392.0, 'object_store_memory': 2147483648.0, 'CPU': 8.0, 'node:127.0.0.1': 1.0, 'node:__internal_head__': 1.0}

INFO flwr 2024-03-24 11:19:48,300 | app.py:219 | Optimize your simulation with Flower VCE: <https://flower.dev/docs/framework/how-to-run-simulations.html>

INFO flwr 2024-03-24 11:19:48,301 | app.py:242 | Flower VCE: Resources for each Virtual Client: {'num_cpus': 1}

INFO flwr 2024-03-24 11:19:48,330 | app.py:288 | Flower VCE: Creating VirtualClientEngineActorPool with 8 actors

INFO flwr 2024-03-24 11:19:48,331 | 2437557820.py:20 | Initializing global parameters

INFO flwr 2024-03-24 11:19:48,332 | 2437557820.py:226 | Requesting initial parameters from one random client

[2m[36m(pid=54792)[0m 2024-03-24 11:19:53.442532: I tensorflow/core/platform/cpu_feature_guard.cc:182] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.

[2m[36m(pid=54792)[0m To enable the following instructions: AVX2 AVX512F AVX512_VNNI FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.

[2m[36m(DefaultActor pid=54799)[0m /Users/rohan/anaconda3/lib/python3.11/site-packages/torch/utils/data/_utils/collate.py:171: UserWarning: The given NumPy array is not writable, and PyTorch does not support non-writable tensors. This means writing to this tensor will result in undefined behavior. You may want to copy the array to protect its data or make it writable before converting it to a tensor. This type of warning will be suppressed for the rest of this program. (Triggered internally at /Users/runner/work/pytorch/pytorch/pytorch/torch/csrc/utils/tensor_numpy.cpp:212.)

[2m[36m(DefaultActor pid=54799)[0m return collate([torch.as_tensor(b) for b in batch], collate_fn_map=collate_fn_map)

[2m[36m(pid=54797)[0m 2024-03-24 11:19:53.454567: I tensorflow/core/platform/cpu_feature_guard.cc:182] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.[32m [repeated 7x across cluster] (Ray deduplicates logs by default. Set RAY_DEDUP_LOGS=0 to disable log deduplication, or see <https://docs.ray.io/en/master/ray-observability/ray-logging.html#log-deduplication> for more options.))[0m

[2m[36m(pid=54797)[0m To enable the following instructions: AVX2 AVX512F AVX512_VNNI FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.[32m [repeated 7x across cluster]][0m

INFO flwr 2024-03-24 11:20:11,106 | 2437557820.py:231 | Received initial parameters from one random client

INFO flwr 2024-03-24 11:20:11,107 | 2437557820.py:23 | Evaluating initial parameters

INFO flwr 2024-03-24 11:20:54,980 | 2437557820.py:26 | initial parameters (loss,

other metrics): 0.01926262924736756, {'accuracy': tensor(0.0013)}

INFO flwr 2024-03-24 11:20:54,981 | 2437557820.py:36 | FL starting

DEBUG flwr 2024-03-24 11:20:54,982 | 2437557820.py:165 | fit_round 1: strategy sampled 7 clients (out of 7)

Evaluation on the server: test_loss=0.0193, test_accuracy=0.0013

Configuring round 1

[2m[36m(DefaultActor pid=54798)[0m /Users/rohan/anaconda3/lib/python3.11/site-packages/torch/utils/data/_utils/collate.py:171: UserWarning: The given NumPy array is not writable, and PyTorch does not support non-writable tensors. This means writing to this tensor will result in undefined behavior. You may want to copy the array to protect its data or make it writable before converting it to a tensor. This type of warning will be suppressed for the rest of this program. (Triggered internally at /Users/runner/work/pytorch/pytorch/pytorch/torch/csrc/utils/tensor_numpy.cpp:212.)

[2m[36m(DefaultActor pid=54798)[0m return collate([torch.as_tensor(b) for b in batch], collate_fn_map=collate_fn_map)

[2m[36m(DefaultActor pid=54799)[0m Client 6: only had its own tree

[2m[36m(DefaultActor pid=54797)[0m /Users/rohan/anaconda3/lib/python3.11/site-packages/torch/utils/data/_utils/collate.py:171: UserWarning: The given NumPy array is not writable, and PyTorch does not support non-writable tensors. This means writing to this tensor will result in undefined behavior. You may want to copy the array to protect its data or make it writable before converting it to a tensor. This type of warning will be suppressed for the rest of this program. (Triggered internally at /Users/runner/work/pytorch/pytorch/pytorch/torch/csrc/utils/tensor_numpy.cpp:212.)

[2m[36m(DefaultActor pid=54797)[0m return collate([torch.as_tensor(b) for b in batch], collate_fn_map=collate_fn_map)

[2m[36m(DefaultActor pid=54793)[0m /Users/rohan/anaconda3/lib/python3.11/site-packages/torch/utils/data/_utils/collate.py:171: UserWarning: The given NumPy array is not writable, and PyTorch does not support non-writable tensors. This means writing to this tensor will result in undefined behavior. You may want to copy the array to protect its data or make it writable before converting it to a tensor. This type of warning will be suppressed for the rest of this program. (Triggered internally at /Users/runner/work/pytorch/pytorch/pytorch/torch/csrc/utils/tensor_numpy.cpp:212.)

[32m [repeated 2x across cluster][0m

[2m[36m(DefaultActor pid=54793)[0m return collate([torch.as_tensor(b) for b in batch], collate_fn_map=collate_fn_map)[32m [repeated 2x across cluster][0m

[2m[36m(DefaultActor pid=54797)[0m Client 3: only had its own tree

[2m[36m(DefaultActor pid=54796)[0m Client 0: only had its own tree

[2m[36m(DefaultActor pid=54799)[0m Client 6: training for 100 iterations/updates

[2m[36m(DefaultActor pid=54795)[0m Client 2: only had its own tree[32m [repeated 4x across cluster][0m

[2m[36m(DefaultActor pid=54799)[0m Client 6: training round complete, 6400 examples processed

[2m[36m(DefaultActor pid=54797)[0m Client 3: training for 100 iterations/updates

[2m[36m(DefaultActor pid=54797)[0m Client 3: training round complete, 6400 examples processed

[2m[36m(DefaultActor pid=54796)[0m Client 0: training for 100 iterations/updates

[2m[36m(DefaultActor pid=54793)[0m Client 4: training round complete, 6400 examples processed[32m [repeated 2x across cluster][0m

DEBUG flwr 2024-03-24 11:22:06,567 | 2437557820.py:180 | fit_round 1 received 7 results and 0 failures

WARNING flwr 2024-03-24 11:22:06,574 | fedxgb_nn_avg.py:95 | No
fit_metrics_aggregation_fn provided
Server side aggregated 7 trees.
INFO flwr 2024-03-24 11:22:55,481 | 2437557820.py:51 | fit progress: (1,
0.003984881211844418, {'accuracy': tensor(0.9987)}, 120.49700006800049)
INFO flwr 2024-03-24 11:22:55,484 | 2437557820.py:98 | evaluate_round 1: no
clients selected, cancel
DEBUG flwr 2024-03-24 11:22:55,485 | 2437557820.py:165 | fit_round 2: strategy
sampled 7 clients (out of 7)
Evaluation on the server: test_loss=0.0040, test_accuracy=0.9987
Configuring round 2
[2m[36m(DefaultActor pid=54798)[0m Client 4: recieved 7 trees
[2m[36m(DefaultActor pid=54798)[0m Client 1: training for 100 iterations/
updates[32m [repeated 4x across cluster][0m
[2m[36m(DefaultActor pid=54798)[0m Client 1: training round complete, 6400
examples processed[32m [repeated 3x across cluster][0m
[2m[36m(DefaultActor pid=54798)[0m Client 4: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54798)[0m Client 4: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54797)[0m Client 1: recieved 7 trees
[2m[36m(DefaultActor pid=54796)[0m Client 0: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 3: recieved 7 trees
[2m[36m(DefaultActor pid=54794)[0m Client 6: recieved 7 trees
[2m[36m(DefaultActor pid=54797)[0m Client 1: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54797)[0m Client 1: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54795)[0m Client 5: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 3: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54799)[0m Client 2: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 3: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54795)[0m Client 5: training for 100 iterations/
updates[32m [repeated 3x across cluster][0m
[2m[36m(DefaultActor pid=54794)[0m Client 6: training round complete, 6400
examples processed[32m [repeated 2x across cluster][0m
DEBUG flwr 2024-03-24 11:41:42,446 | 2437557820.py:180 | fit_round 2 received 7
results and 0 failures
Server side aggregated 7 trees.
INFO flwr 2024-03-24 11:42:29,564 | 2437557820.py:51 | fit progress: (2,
0.0006740111143347211, {'accuracy': tensor(0.9987)}, 1294.6128934499993)
INFO flwr 2024-03-24 11:42:29,567 | 2437557820.py:98 | evaluate_round 2: no
clients selected, cancel
DEBUG flwr 2024-03-24 11:42:29,568 | 2437557820.py:165 | fit_round 3: strategy
sampled 7 clients (out of 7)
Evaluation on the server: test_loss=0.0007, test_accuracy=0.9987
Configuring round 3
[2m[36m(DefaultActor pid=54799)[0m Client 4: recieved 7 trees
[2m[36m(DefaultActor pid=54799)[0m Client 2: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54799)[0m Client 2: training round complete, 6400
examples processed[32m [repeated 2x across cluster][0m

[2m[36m(DefaultActor pid=54795)[0m Client 5: recieved 7 trees
[2m[36m(DefaultActor pid=54795)[0m Client 5: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54795)[0m Client 5: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54796)[0m Client 1: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 3: recieved 7 trees[32m [repeated 3x
across cluster][0m
[2m[36m(DefaultActor pid=54794)[0m Client 0: recieved 7 trees
[2m[36m(DefaultActor pid=54799)[0m Client 4: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54799)[0m Client 4: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54796)[0m Client 1: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54796)[0m Client 1: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54798)[0m Client 6: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54797)[0m Client 2: training round complete, 6400
examples processed[32m [repeated 2x across cluster][0m
[2m[36m(DefaultActor pid=54794)[0m Client 0: training for 100 iterations/
updates[32m [repeated 3x across cluster][0m
DEBUG flwr 2024-03-24 11:54:04,696 | 2437557820.py:180 | fit_round 3 received 7
results and 0 failures
Server side aggregated 7 trees.
INFO flwr 2024-03-24 11:54:49,924 | 2437557820.py:51 | fit progress: (3,
0.0001821366711859788, {'accuracy': tensor(0.9987)}, 2034.959130883999)
INFO flwr 2024-03-24 11:54:49,928 | 2437557820.py:98 | evaluate_round 3: no
clients selected, cancel
DEBUG flwr 2024-03-24 11:54:49,929 | 2437557820.py:165 | fit_round 4: strategy
sampled 7 clients (out of 7)
Evaluation on the server: test_loss=0.0002, test_accuracy=0.9987
Configuring round 4
[2m[36m(DefaultActor pid=54794)[0m Client 5: recieved 7 trees
[2m[36m(DefaultActor pid=54794)[0m Client 0: training round complete, 6400
examples processed[32m [repeated 2x across cluster][0m
[2m[36m(DefaultActor pid=54794)[0m Client 5: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54794)[0m Client 5: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54796)[0m Client 2: recieved 7 trees
[2m[36m(DefaultActor pid=54799)[0m Client 1: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 6: recieved 7 trees
[2m[36m(DefaultActor pid=54797)[0m Client 3: recieved 7 trees[32m [repeated 3x
across cluster][0m
[2m[36m(DefaultActor pid=54796)[0m Client 2: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54796)[0m Client 2: training round complete, 6400
examples processed
[2m[36m(DefaultActor pid=54793)[0m Client 6: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54799)[0m Client 1: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54799)[0m Client 1: training round complete, 6400
examples processed
DEBUG flwr 2024-03-24 12:07:00,567 | 2437557820.py:180 | fit_round 4 received 7
results and 0 failures

Server side aggregated 7 trees.
INFO flwr 2024-03-24 12:07:47,179 | 2437557820.py:51 | fit progress: (4, 0.00014037000508540778, {'accuracy': tensor(0.9987)}), 2812.200083357)
INFO flwr 2024-03-24 12:07:47,205 | 2437557820.py:98 | evaluate_round 4: no clients selected, cancel
DEBUG flwr 2024-03-24 12:07:47,206 | 2437557820.py:165 | fit_round 5: strategy sampled 7 clients (out of 7)
Evaluation on the server: test_loss=0.0001, test_accuracy=0.9987
Configuring round 5
[2m[36m(DefaultActor pid=54797)[0m Client 4: recieved 7 trees
[2m[36m(DefaultActor pid=54797)[0m Client 3: training for 100 iterations/updates[32m [repeated 3x across cluster][0m
[2m[36m(DefaultActor pid=54797)[0m Client 3: training round complete, 6400 examples processed[32m [repeated 4x across cluster][0m
[2m[36m(DefaultActor pid=54795)[0m Client 2: recieved 7 trees
[2m[36m(DefaultActor pid=54796)[0m Client 5: recieved 7 trees
[2m[36m(DefaultActor pid=54793)[0m Client 0: recieved 7 trees
[2m[36m(DefaultActor pid=54798)[0m Client 1: recieved 7 trees
[2m[36m(DefaultActor pid=54796)[0m Client 5: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54796)[0m Client 5: training round complete, 6400 examples processed
[2m[36m(DefaultActor pid=54799)[0m Client 6: recieved 7 trees
[2m[36m(DefaultActor pid=54794)[0m Client 3: recieved 7 trees
[2m[36m(DefaultActor pid=54795)[0m Client 2: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54795)[0m Client 2: training round complete, 6400 examples processed
[2m[36m(DefaultActor pid=54797)[0m Client 4: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54797)[0m Client 4: training round complete, 6400 examples processed
[2m[36m(DefaultActor pid=54793)[0m Client 0: training for 100 iterations/updates
[2m[36m(DefaultActor pid=54793)[0m Client 0: training round complete, 6400 examples processed
[2m[36m(DefaultActor pid=54799)[0m Client 6: training for 100 iterations/updates[32m [repeated 2x across cluster][0m
[2m[36m(DefaultActor pid=54799)[0m Client 6: training round complete, 6400 examples processed[32m [repeated 2x across cluster][0m
DEBUG flwr 2024-03-24 13:20:04,658 | 2437557820.py:180 | fit_round 5 received 7 results and 0 failures
Server side aggregated 7 trees.
INFO flwr 2024-03-24 13:20:58,061 | 2437557820.py:51 | fit progress: (5, 0.00013789344591905132, {'accuracy': tensor(0.9987)}), 7203.224651641)
INFO flwr 2024-03-24 13:20:58,073 | 2437557820.py:98 | evaluate_round 5: no clients selected, cancel
INFO flwr 2024-03-24 13:20:58,074 | 2437557820.py:79 | FL finished in 7203.237574815999
INFO flwr 2024-03-24 13:20:58,075 | app.py:226 | app_fit: losses_distributed []
INFO flwr 2024-03-24 13:20:58,076 | app.py:227 | app_fit: metrics_distributed_fit {}
INFO flwr 2024-03-24 13:20:58,076 | app.py:228 | app_fit: metrics_distributed {}
INFO flwr 2024-03-24 13:20:58,077 | app.py:229 | app_fit: losses centralized [(0, 0.01926262924736756), (1, 0.003984881211844418), (2, 0.0006740111143347211),

(3, 0.0001821366711859788), (4, 0.00014037000508540778), (5, 0.00013789344591905132)]

INFO flwr 2024-03-24 13:20:58,083 | app.py:230 | app_fit: metrics_centralized {'accuracy': [(0, tensor(0.0013)), (1, tensor(0.9987)), (2, tensor(0.9987)), (3, tensor(0.9987)), (4, tensor(0.9987)), (5, tensor(0.9987))]}

Evaluation on the server: test_loss=0.0001, test_accuracy=0.9987

History (loss, centralized):

round 0: 0.01926262924736756

round 1: 0.003984881211844418

round 2: 0.0006740111143347211

round 3: 0.0001821366711859788

round 4: 0.00014037000508540778

round 5: 0.00013789344591905132

History (metrics, centralized):

{'accuracy': [(0, tensor(0.0013)), (1, tensor(0.9987)), (2, tensor(0.9987)), (3, tensor(0.9987)), (4, tensor(0.9987)), (5, tensor(0.9987))]}