```
(.venv) ubuntu@146-235-212-176:~/proj/mod3-Navxihziq$ python project/run_fast_tensor.py --BACKEND gpu --HIDDEN 100 --DATASET simple --RATE 0.05
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 1 will likely result in GPU under-utilization due to low o
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  warn(NumbaPerformanceWarning(msg))
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 100 will likely result in GPU under-utilization due to low
occupancy.
  warn(NumbaPerformanceWarning(msg))
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 16 will likely result in GPU under-utilization due to low
occupancy.
  warn(NumbaPerformanceWarning(msg))
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 7 will likely result in GPU under-utilization due to low o
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/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 8 will likely result in GPU under-utilization due to low o
ccupancy.
  warn(NumbaPerformanceWarning(msg))
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/dispatcher.py:536: NumbaPerformanceWarning: Grid size 2 will likely result in GPU under-utilization due to low o
ccupancy.
  warn(NumbaPerformanceWarning(msg))
/home/ubuntu/proj/mod3-Navxihziq/.venv/lib/python3.10/site-packages/numba/cuda/cudadrv/devicearray.py:888: NumbaPerformanceWarning: Host array used in CUDA kernel will incur copy overhead to/
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ccupancy.
  warn(NumbaPerformanceWarning(msg))
Epoch  0  loss  6.704483083841267 correct 31 time 3.92s time per epoch 3.92s
Epoch  10  loss  4.216760860538249 correct 45 time 19.04s time per epoch 1.73s
Epoch  20  loss  2.039506239455864 correct 50 time 34.12s time per epoch 1.62s
Epoch  30  loss  2.6713099276871577 correct 47 time 49.13s time per epoch 1.58s
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Epoch  40  loss  0.5812707290991249 correct 49 time 64.17s time per epoch 1.57s
Epoch  50  loss  1.0392651753198405 correct 50 time 79.20s time per epoch 1.55s
Epoch  60  loss  1.1209911862628306 correct 49 time 94.28s time per epoch 1.55s
Epoch  70  loss  1.4330156153269031 correct 48 time 109.39s time per epoch 1.54s
Epoch  80  loss  0.6971472984702927 correct 50 time 124.45s time per epoch 1.54s
Epoch  90  loss  0.06328335212521252 correct 48 time 139.66s time per epoch 1.53s
Epoch  100  loss  1.7030878306924464 correct 48 time 154.77s time per epoch 1.53s
Epoch  110  loss  0.7518350296464371 correct 50 time 169.90s time per epoch 1.53s
Epoch  120  loss  0.7894673939097282 correct 50 time 184.97s time per epoch 1.53s
Epoch  130  loss  0.4187893076324422 correct 50 time 200.24s time per epoch 1.53s
Epoch  140  loss  0.9183523345697427 correct 50 time 215.51s time per epoch 1.53s
Epoch  150  loss  0.4058593412944356 correct 49 time 230.97s time per epoch 1.53s
Epoch  160  loss  0.350856265774185 94 correct 50 time 246.40s time per epoch 1.53s
Epoch  170  loss  0.20101432823167287 correct 50 time 261.89s time per epoch 1.53s
Epoch  180  loss  1.072228514334062 correct 50 time 277.31s time per epoch 1.53s
Epoch  190  loss  0.4388051777287315 correct 50 time 292.34s time per epoch 1.53s
Epoch  200  loss  0.7136973971679863 correct 50 time 307.34s time per epoch 1.53s
Epoch  210  loss  0.025048719554116642 correct 50 time 322.33s time per epoch 1.53s
Epoch  220  loss  0.0611063990383387 correct 50 time 337.46s time per epoch 1.53s
Epoch  230  loss  0.0977671856627235 correct 50 time 352.54s time per epoch 1.53s
Epoch  240  loss  0.265560866813069 45 correct 50 time 368.65s time per epoch 1.53s
Epoch  250  loss  0.5674033877365865 correct 50 time 383.93s time per epoch 1.53s
Epoch  260  loss  1.0000835721920882 correct 50 time 398.63s time per epoch 1.53s
Epoch  270  loss  1.2565762487285232 correct 50 time 412.67s time per epoch 1.52s
Epoch  280  loss  1.3230792099051627 correct 50 time 426.86s time per epoch 1.52s
Epoch  290  loss  0.145630866571699 69 correct 50 time 440.96s time per epoch 1.52s
Epoch  300  loss  0.144597280064488 96 correct 50 time 454.75s time per epoch 1.51s
Epoch  310  loss  0.8089563099364643 correct 50 time 468.54s time per epoch 1.51s
Epoch  320  loss  0.189357879335981 36 correct 50 time 482.53s time per epoch 1.50s
Epoch  330  loss  1.1890661830555347 correct 49 time 500.71s time per epoch 1.51s
Epoch  340  loss  0.492012911010531 74 correct 50 time 528.45s time per epoch 1.55s
Epoch  350  loss  0.0077540556445676 72 correct 50 time 556.52s time per epoch 1.59s
Epoch  360  loss  0.0050600031739717844 correct 50 time 595.16s time per epoch 1.65s
Epoch  370  loss  0.21945037713707 88 correct 50 time 637.53s time per epoch 1.72s
Epoch  380  loss  0.06837081958231209 correct 50 time 680.27s time per epoch 1.79s
Epoch  390  loss  0.12990114798816485 correct 50 time 723.25s time per epoch 1.85s
Epoch  400  loss  0.26557950979150396 correct 50 time 764.03s time per epoch 1.91s
^CTraceback (most recent call last):
  File "/home/ubuntu/proj/mod3-Navxihziq/project/run_fast_tensor.py", line 145, in <module>
    ).train(data, RATE)
  File "/home/ubuntu/proj/mod3-Navxihziq/project/run_fast_tensor.py", line 100, in train
    (loss / y.shape[0]).sum().view(1).backward()
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor.py", line 278, in backward
    backpropagate(self, grad_output)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/autodiff.py", line 165, in backpropagate
    for parent, deriv in v.chain_rule(deriv_map[v.unique_id]):
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor.py", line 266, in chain_rule
    x = h.last_fn._backward(h.ctx, d_output)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor_functions.py", line 34, in _backward
    return wrap_tuple(cls.backward(ctx, grad_out))  # type: ignore
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor_functions.py", line 140, in backward
    return a.f.relu_back_zip(a, grad_output)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/cuda_ops.py", line 78, in ret
    out = a.zeros(c_shape)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor.py", line 213, in zeros
    out = zero(shape)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor.py", line 206, in zero
    return Tensor.make(
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor.py", line 163, in make
    return Tensor(TensorData(storage, shape, strides), backend=backend)
  File "/home/ubuntu/proj/mod3-Navxihziq/minitorch/tensor_data.py", line 198, in __init__
    self._storage = array(storage, dtype=float64)
KeyboardInterrupt

(.venv) ubuntu@146-235-212-176:~/proj/mod3-Navxihziq$
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