Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
[2] import torch
    import numpy as np
```

0s

```
[ ] a = torch.tensor([1,2,3,4])
    b = torch.tensor([5,6,7,8])
```

Arithmetic Operations

4 10 cells hidden

Tensor Ops

```
[ ] torch.zeros(2,5,3)
```

```
tensor([[[0., 0., 0.],
         [0., 0., 0.],
         [0., 0., 0.],
         [0., 0., 0.],
```

0s completed at 3:44 PM

CODES & DATA ARE AVAILBLE AT
WWW.AISCIENCES.ACADEMY/COURSE-PYTORCH

Pytorch.ipynb - Colab

colab.research.google.com/drive/1imQs4frEn2sYP0VW7SjxgJwC5ZgNZdpv?authuser=0#scrollTo=zxCy-OE7V9Ze

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Gemini

Arithmetic Operations

[ ] 10 cells hidden

Tensor Ops

[ ] 11 cells hidden

Auto-Grad

[ ] Start coding or generate with AI.

[ ] Start coding or generate with AI.

[ ] Start coding or generate with AI.

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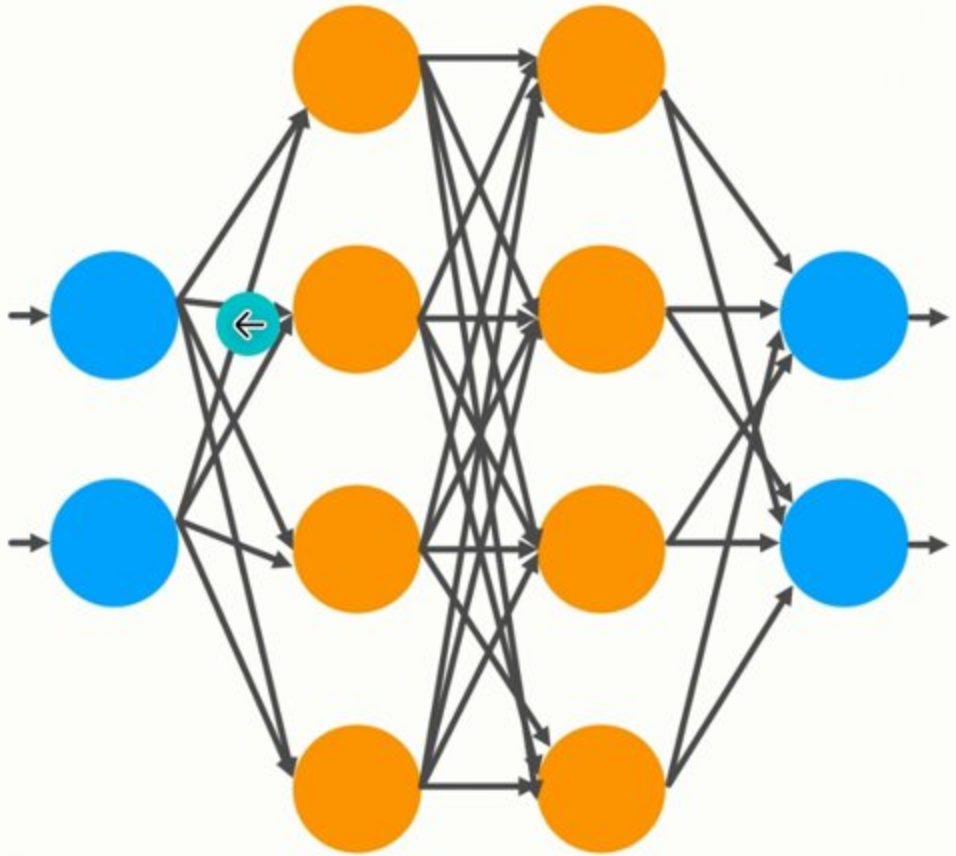
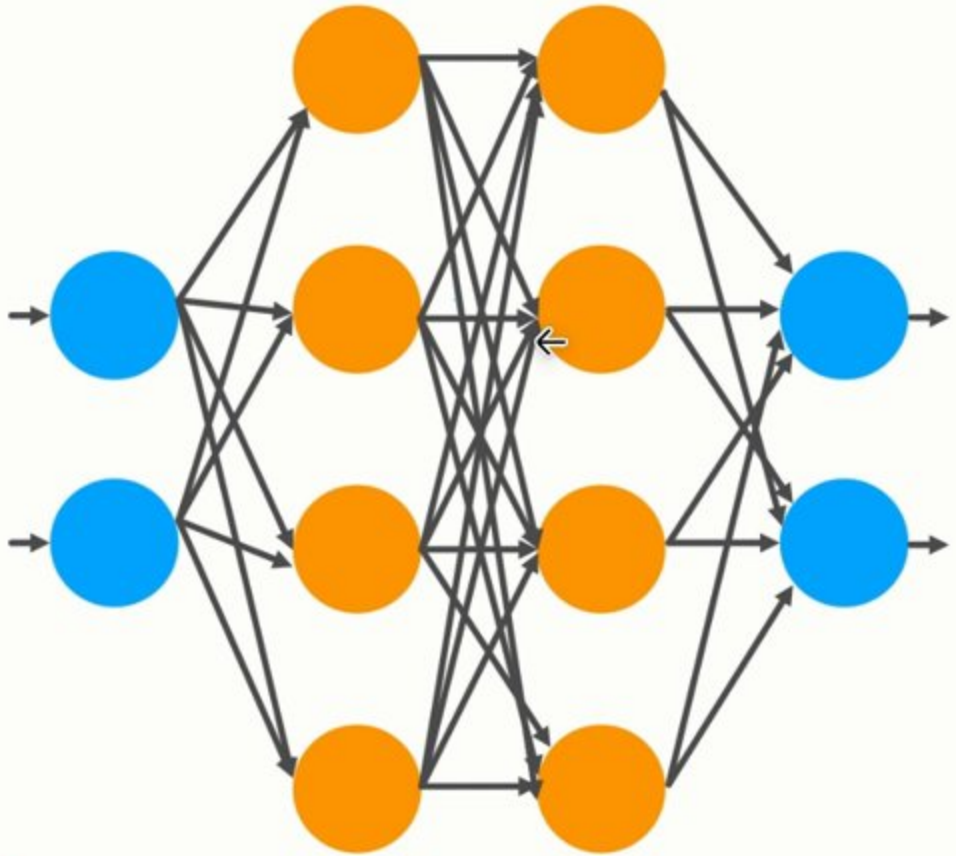
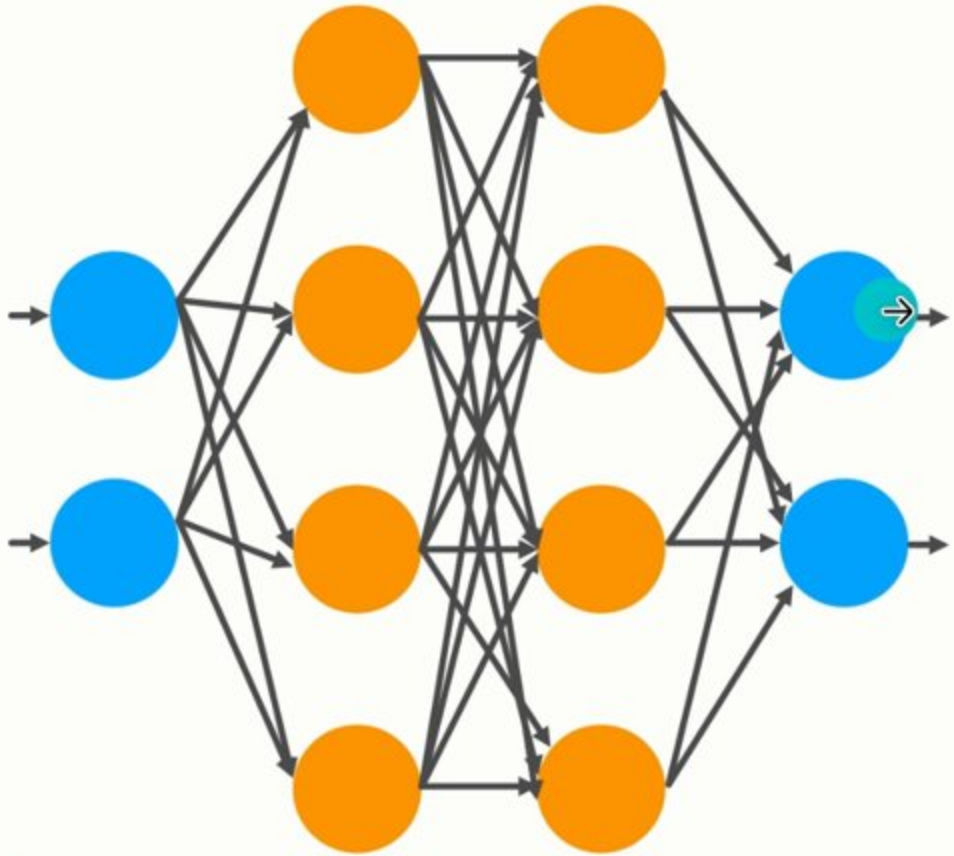
AUTO-GRAD

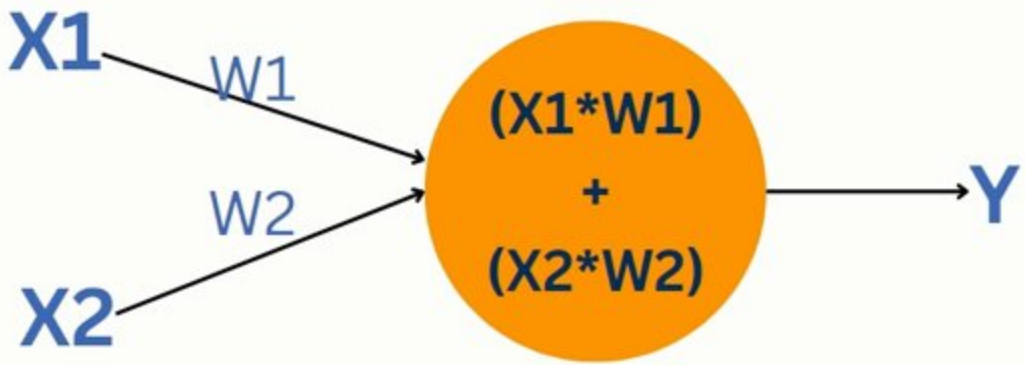


AUTO-GRAD

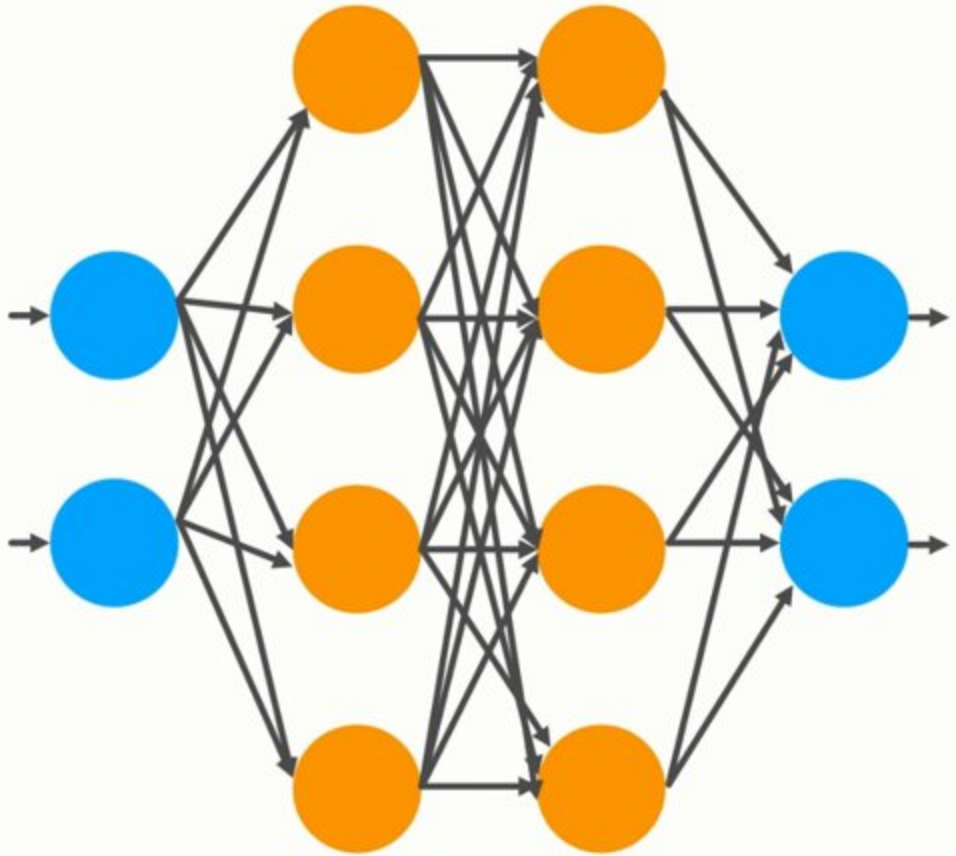


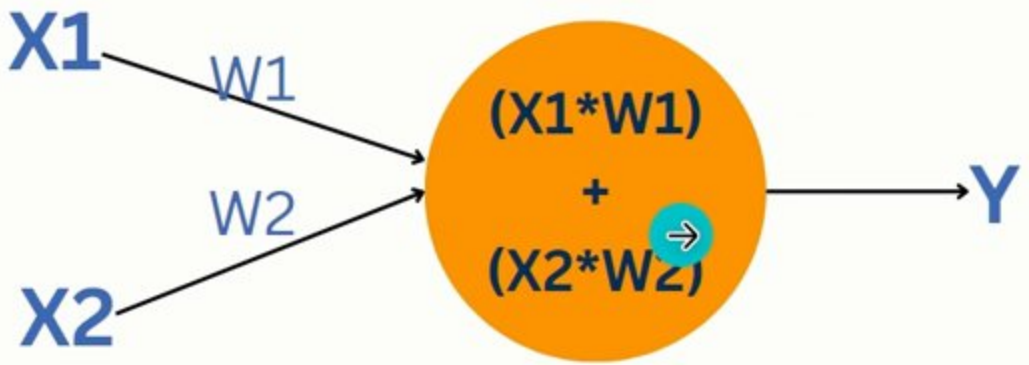
AUTO-GRAD



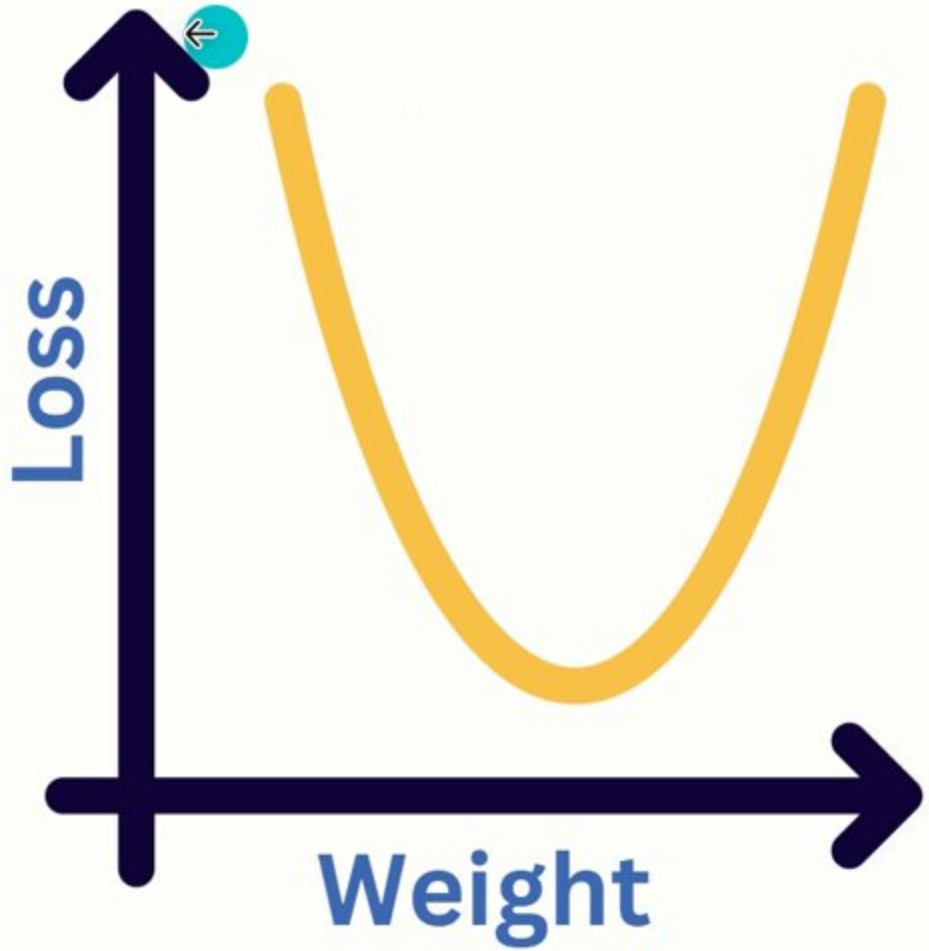


AUTO-GRAD

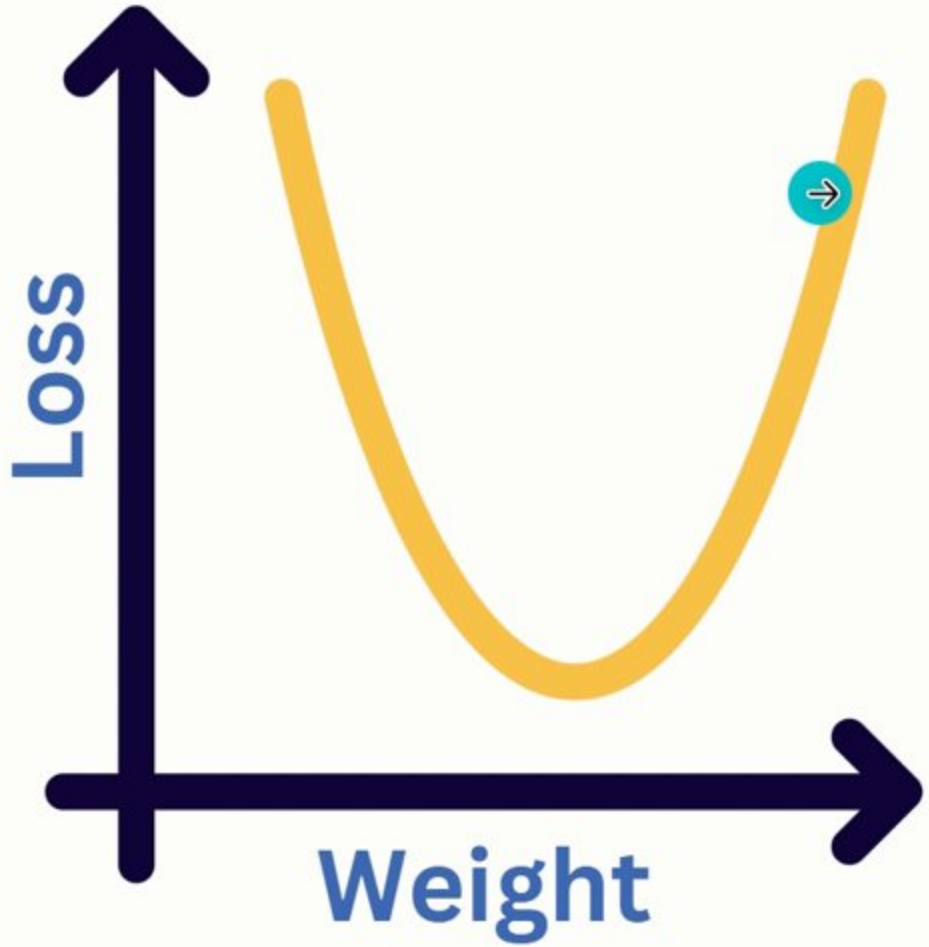




GRADIENT DECENT

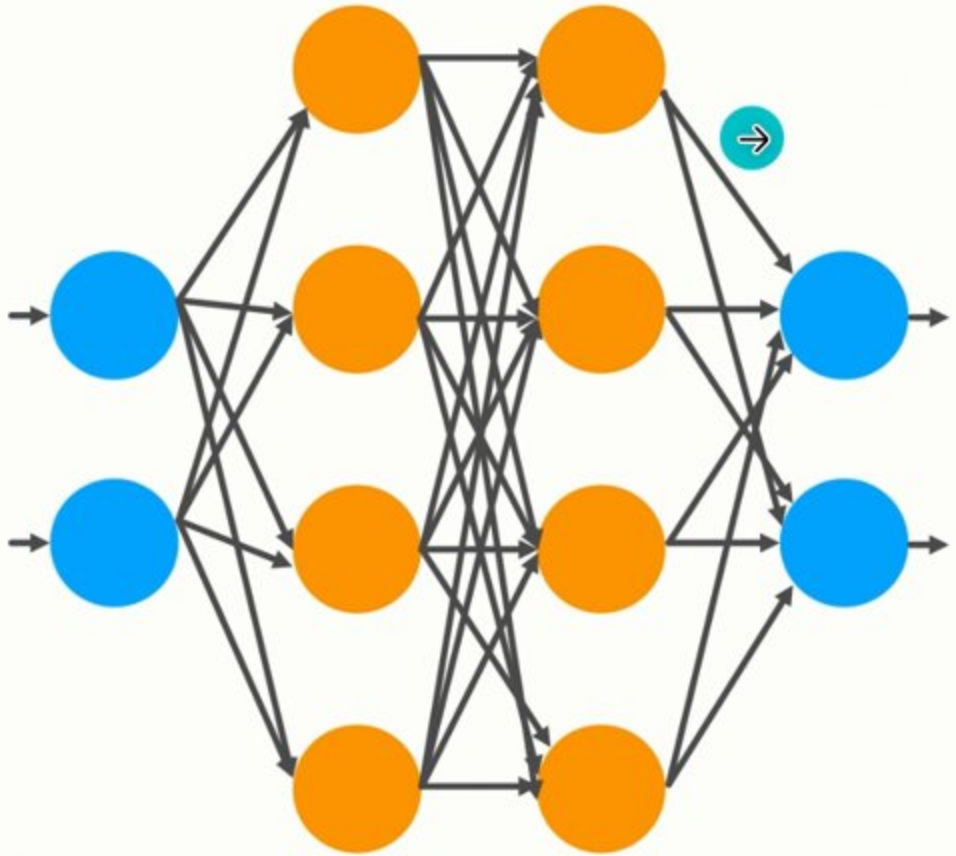


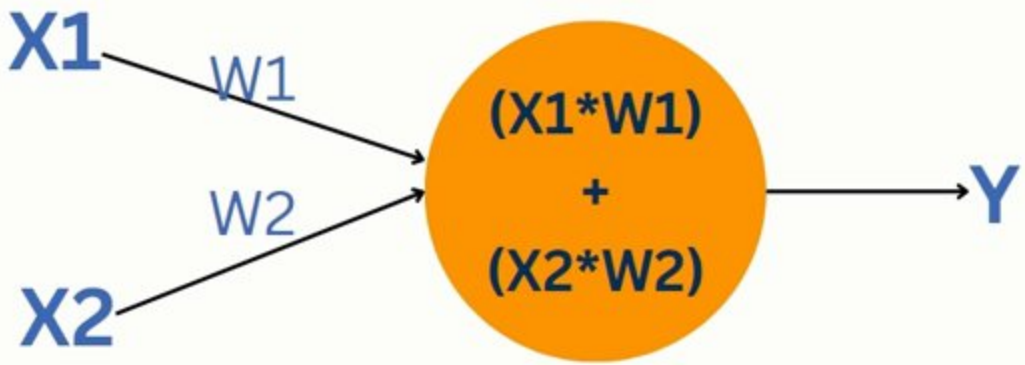
GRADIENT DECENT



$$\frac{dy_{(\text{loss})}}{dx_{(\text{weight})}}$$

AUTO-GRAD





Pytorch.ipynb - Colab

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RAM Disk

Gemini

Auto-Grad

```
x = torch.randn(3, requires_grad=True)
x
```

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

Auto-Grad

```
x = torch.randn(3, requires_grad=True)
```

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RAM Disk

Gemini

Auto-Grad

0s

```
x = torch.randn(3, requires_grad=True)
x
```

```
tensor([-1.4773,  1.2479, -1.5793], requires_grad=True)
```

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

Auto-Grad

```
x = torch.randn(3, requires_grad=True)
y = x*2
print(x)
P
```

```
tensor([-1.4773,  1.2479, -1.5793], requires_grad=True)
```

[ ] Start coding or generate with AI.

[ ] Start coding or generate with AI.

[ ] Start coding or generate with AI.

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[ ] Start coding or generate with AI.

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RAM Disk

Gemini

Auto-Grad

```
x = torch.randn(3, requires_grad=True)
y = x*2
print(x)
print(y)
```

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RAM Disk

Gemini

Auto-Grad

0s

```
x = torch.randn(3, requires_grad=True)
y = x*2
print(x)
print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

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RAM Disk

Gemini

Auto-Grad

[15] 0s

```
x = torch.randn(3, requires_grad=True)
y = x*2
print(x)
print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

```
y.backward()
```

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RAM Disk

Gemini

```
[15] print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

```
y.backward()
print(x.grad)
```

```
---------------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-16-552f06316609> in <cell line: 1>()
----> 1 y.backward()
      2 print(x.grad)

2 frames
/usr/local/lib/python3.10/dist-packages/torch/autograd/__init__.py in _make_grads(outputs, grads, is_grads_batched)
    131             if out.requires_grad:
    132                 if out.numel() != 1:
--> 133                     raise RuntimeError(
    134                         "grad can be implicitly created only for scalar outputs"
    135                     )

RuntimeError: grad can be implicitly created only for scalar outputs
```

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RAM Disk

Gemini

```
x = torch.randn(3, requires_grad=True)
y = x*2
print(x)
print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

[16]

```
y.backward()
print(x.grad)
```

```
---------------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-16-552f06316609> in <cell line: 1>()
----> 1 y.backward()
      2 print(x.grad)

2 frames
/usr/local/lib/python3.10/dist-packages/torch/autograd/__init__.py in _make_grads(outputs, grads, is_grads_batched)
    131             if out.requires_grad:
    132                 if out.numel() != 1:
--> 133                     raise RuntimeError(
    134                         "grad can be implicitly created only for scalar outputs"
```

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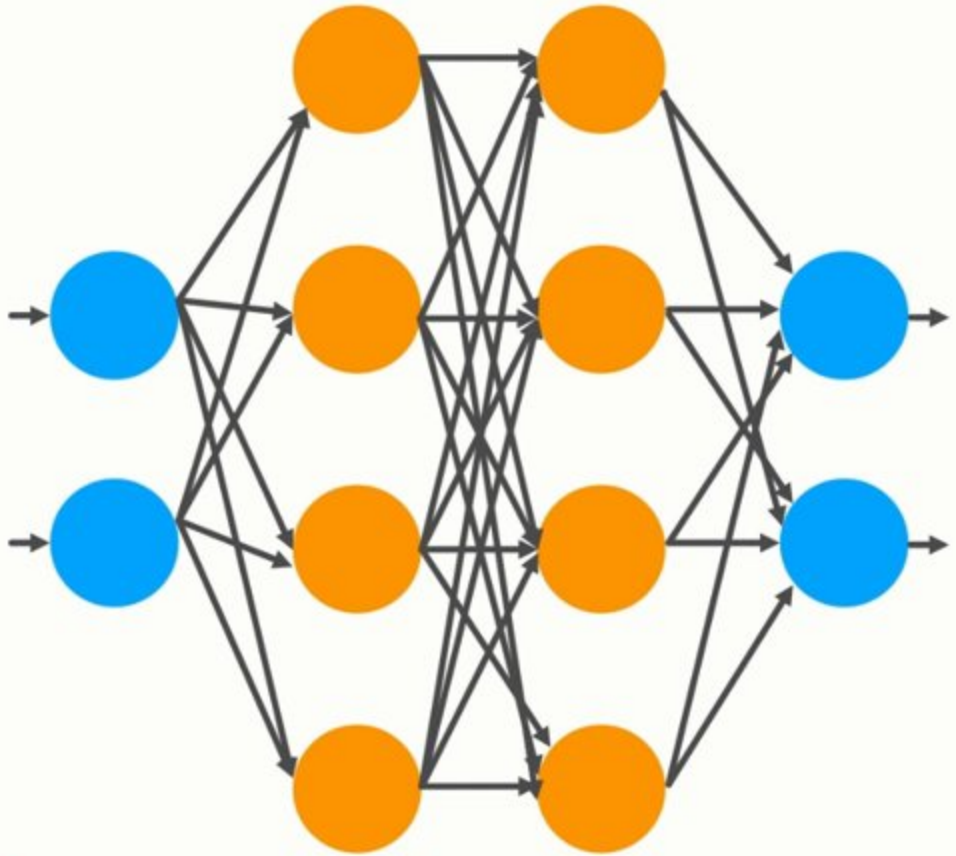
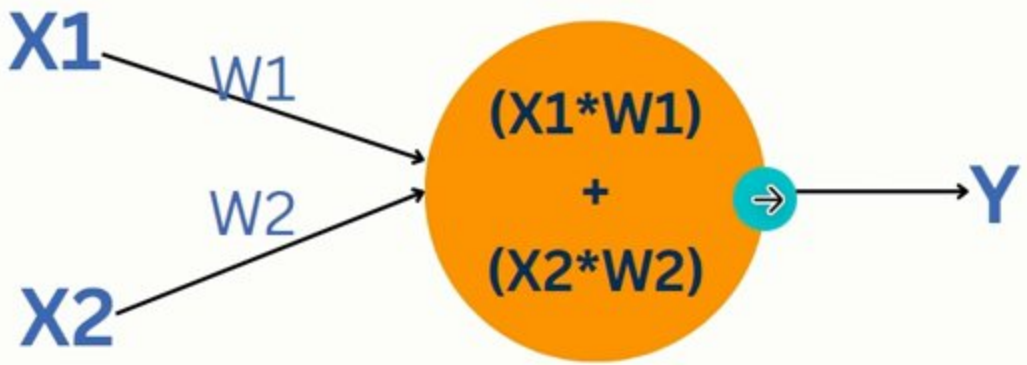
AUTO-GRAD





Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
x = torch.randn(3, requires_grad=True)
y = x
print(x)
print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

[16] 0s

```
y.backward()
print(x.grad)
```

```
---------------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-16-552f06316609> in <cell line: 1>()
----> 1 y.backward()
      2 print(x.grad)

2 frames
/usr/local/lib/python3.10/dist-packages/torch/autograd/__init__.py in _make_grads(outputs, grads, is_grads_batched)
    131             if out.requires_grad:
    132                 if out.numel() != 1:
--> 133                     raise RuntimeError(
    134                         "grad can be implicitly created only for scalar outputs"
```

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AISCIENCES

Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
y.backward()
print(x)
print(y)
```

```
tensor([-0.3505,  1.1060, -0.0660], requires_grad=True)
tensor([-0.7010,  2.2120, -0.1321], grad_fn=<MulBackward0>)
```

[16] 0s

```
y.backward()
print(x.grad)
```

```
---------------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-16-552f06316609> in <cell line: 1>()
----> 1 y.backward()
      2 print(x.grad)

2 frames
/usr/local/lib/python3.10/dist-packages/torch/autograd/__init__.py in _make_grads(outputs, grads, is_grads_batched)
    131             if out.requires_grad:
    132                 if out.numel() != 1:
```

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

[16]

```
y.backward()
print(x.grad)
```

```
---------------------------------------------------------------------------
RuntimeError                              Traceback (most recent call last)
<ipython-input-16-552f06316609> in <cell line: 1>()
----> 1 y.backward()
      2 print(x.grad)

2 frames
/usr/local/lib/python3.10/dist-packages/torch/autograd/__init__.py in _make_grads(outputs, grads, is_grads_batched)
    131             if out.requires_grad:
    132                 if out.numel() != 1:
--> 133                     raise RuntimeError(
    134                         "grad can be implicitly created only for scalar outputs"
```

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

[17] 0s

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

1s

```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

[ ] Start coding or generate with AI.

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[ ] Start coding or generate with AI.

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AISCIENCES

Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

```
[18] y.backward()
     print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

[17] 0s

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

[18] 1s

```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

```
z = (x**2).mean()
```

[ ] Start coding or generate with AI.

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AISCIENCES

Pytorch.ipynb - Colab

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RAM Disk

Gemini

[17] 0s
```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

[18] 1s
```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

```
z = (y**2).mean()
z
```

[ ] Start coding or generate with AI.

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Pytorch.ipynb - Colab

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RAM Disk

Gemini

[17] 0s

```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

[18] 1s

```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

0s

```
z = (y**2).mean()
z.backward()
print(x.grad)
```

```
tensor([0.3504, 0.3504, 0.3504])
```

[ ] Start coding or generate with AI.

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AISCIENCES

Pytorch.ipynb - Colab

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RAM Disk

Gemini

[17] 0s
```
x = torch.randn(3, requires_grad=True)
y = x.mean()
print(x)
print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

1s
```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

0s
```
z = (y**2).mean()
z.backward()
print(x.grad)
```

```
tensor([0.3504, 0.3504, 0.3504])
```

```
[ ] Start coding or generate with AI.
```

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AISCIENCES

Pytorch.ipynb - Colab

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RAM Disk

Gemini

```
[17] x = torch.randn(3, requires_grad=True)
     y = x.mean()
     print(x)
     print(y)
```

```
tensor([ 1.9994, -1.8071, -0.1153], requires_grad=True)
tensor(0.0256, grad_fn=<MeanBackward0>)
```

```
y.backward()
print(x.grad)
```

```
tensor([0.3333, 0.3333, 0.3333])
```

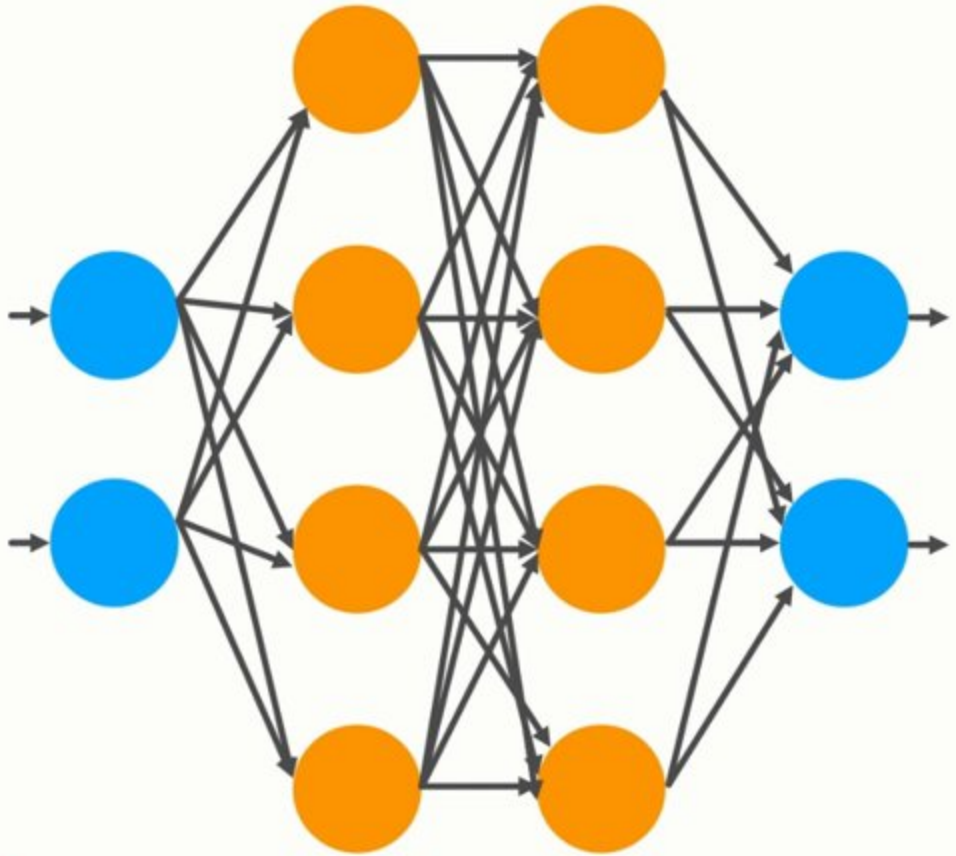
```
z = (y**2).mean()
z.backward()
print(x.grad)
```

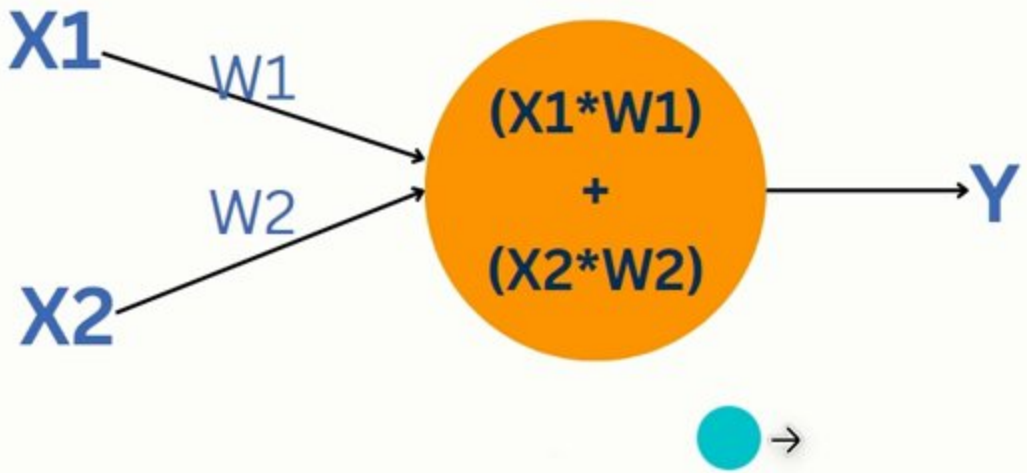
```
tensor([0.3504, 0.3504, 0.3504])
```

```
[ ] Start coding or generate with AI.
```

0s completed at 3:57 PM

AUTO-GRAD





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