

# Multilayer perceptron

Quiz, 4 questions

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1.

Choose the correct statements about MLP

- ☒ We can train MLP with SGD
  - ☒ A hidden layer of MLP automatically learns new helpful features for the task
  - ☐ MLP can have only 1 hidden layer
  - ☐ The first hidden layer contains predictions for your task
  - ☐ MLP with a linear activation function is better than a linear model
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2.

Apply a chain rule to calculate  $\frac{\partial a}{\partial x}$  where  $a(x, y) = \sin(xy) \cdot e^x$ .

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**Here is an example of the syntax:  $\sin(x*y)*\exp(x)$ , more info [here](#)**

Preview

$$ye^x \cos(xy) + e^x \sin(xy)$$

$\sin(x*y)*\exp(x) + \cos(x*y)*y*\exp(x)$

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3.

Choose the correct statements about backpropagation

- ☒ It is an efficient way to apply a chain rule

# Multilayer perceptron

It is the way to train modern neural networks

Quiz, 4 questions

☐ You can use non-differentiable loss to train your MLP

☐ It is done in one pass

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4.

What is the time complexity of backpropagation algorithm w.r.t. number of edges  $N$  in the computational graph?

- ☒  $O(N)$
  - ☐  $O(\log(N))$
  - ☐  $O(N!)$
  - ☐  $O(N^2)$
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