Kahoot!

DL Lecture Quiz 4 (2021)

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A public kahoot

Questions (7)

1 - Quiz

Why do we minimize empirical risk instead of true risk? 30 sec

- They have the same global minima ✗
- We usually do not have access to the true risk ✓
- They have the same local minima ✗
- It gives a better performance ✗

2 - Quiz

How does # local optima relate to # global optima? 20 sec

- # global $\geq$ # local ✗
- # global $>$ # local ✗
- # global $<$ # local ✗
- # global $\leq$ # local ✓

3 - Quiz

The Jacobian is zero in

20 sec

- Saddle points ✓
- Global optima ✓
- Local optima ✓
- Zero crossing points ✗

4 - Quiz

Why is the update equation for gradient descent $x - \alpha \frac{df}{dx}$ instead of $x + \alpha \frac{df}{dx}$

20 sec

- Both are equivalent ✗
- We are minimizing f ✓
- $\alpha < 0$ ✗
- $\frac{df}{dx} < 0$ ✗

5 - Quiz

Why are first rather than second-order optimization methods are used in practical deep learning?

30 sec

- Deep networks have many saddle points ✓
- The Jacobian is expensive to compute and store. ✗
- Deep networks have many local optima ✗
- The Hessian is expensive to compute and store. ✓

6 - Quiz

When halving the mini-batch size in SGD, the error on the gradient estimate will in expectation ...

20 sec

- double ✗
- more than double ✗
- remain the same ✗
- less than double ✓

7 - Quiz

With adaptive gradient algorithms, the base learning rate:

20 sec

- Does not matter ✗
- Has to change at every step ✗
- Doesn't need to be scheduled ✗
- May need to be scheduled ✓