Day-5 (10/01/2025) Quiz on "Deep Learning Essentials"

Total points   6/10

Winter School Certificate Program (06/01/2025 to 10/01/2025)

The respondent's email (**sabharwalkunsh05@gmail.com**) was recorded on submission of this form.

✓   1. In which scenario would you typically choose the Adam optimizer? *   2/2

○ A) When you need to adjust the learning rate manually

○ B) When the dataset is very large

● C) When you need to optimize hyperparameters in a more automated manner   ✓

○ D) When memory constraints are the primary concern

✓   2. The primary difference between Adam and RMSprop is: *   2/2

● A) Adam uses both the moving average of the gradient and the squared gradient, whereas RMSprop uses only the squared gradient   ✓

○ B) Adam uses a fixed learning rate, whereas RMSprop uses an adaptive learning rate

○ C) RMSprop adapts to momentum, whereas Adam does not

○ D) Adam performs better on smaller datasets

✕ 3. What does the "momentum" term in optimization algorithms like SGD   *0/2
    with momentum help with?

⦿ A) Decreasing the learning rate dynamically   ✕

◯ B) Moving the parameters towards local minima faster

◯ C) Preventing overfitting during training

◯ D) Preventing vanishing gradients

Correct answer

⦿ B) Moving the parameters towards local minima faster

✓ 4. Which optimization algorithm is most likely to work well when training   *2/2
    on noisy or sparse data?

⦿ A) Adagrad   ✓

◯ B) Adam

◯ C) SGD

◯ D) Momentum-based SGD

✕   5. What is the main advantage of using the RMSprop algorithm over   *0/2
         traditional SGD?

    ◯ A) It uses adaptive learning rates for each parameter

    ⦿ B) It requires less memory to store gradients   ✕

    ◯ C) It does not require backpropagation

    ◯ D) It converges faster than SGD in all cases

Correct answer

    ⦿ A) It uses adaptive learning rates for each parameter

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