

Supervised and Deep Learning

ML – 463

Assignment-1

Q1: How does machine learning differ from traditional programming?

Q2: Explain back propagation algorithm.

Q3: Compare linear regression with logistic regression

Q4: Explain various evaluation metrics with Examples.

Q5: Compare overfitting with underfitting. Explain how the overfitting can be handled in machine learning.

Assignment-2

Q1: Compare learning and optimization in context of Deep Learning.

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Q3: Briefly explain optimization algorithm.

Q4: Explain activation function. How they are important in deep learning?

Q5: What is Regularization? What is its need?

Q6: Differentiate between Machine Learning and Deep Learning.

Q7: What is ANN? Explain the process of backpropagation in ANN with the help of example.

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Assignment 3

Q1: Describe the architecture of a typical CNN.

Q2: What types of RNN networks do you know? Explain the difference between GRU and LSTM

Q3: How does RNN training occurs? What problems exists in RNN, Explain.

Q4: What are the main gates in LSTM and what are their tasks?

Q5: What is the transformer architecture, and why is it widely used in natural language processing tasks?

Q6: Describe the concept of Image segmentation and its application.

Q7: Explain the concept of feature extraction in Computer Vision.

Q8: Discuss some popular deep learning frameworks or libraries used for computer vision tasks.

Q9: Can you name and explain a few hyperparameters used for training a neural networks?

Q10: What is the application of Generative Adversarial Networks (GANs)? Differentiate Conditional GANs and Unconditional GANs.