

Activation functions

Assignment Questions

- 1. Explain the role of activation functions in neural networks. Compare and contrast linear and nonlinear activation functions. Why are nonlinear activation functions preferred in hidden layers?**
- 2. Describe the Sigmoid activation function. What are its characteristics, and in what type of layers is it commonly used? Explain the Rectified Linear Unit (ReLU) activation function. Discuss its advantages and potential challenges. What is the purpose of the Tanh activation function? How does it differ from the Sigmoid activation function?**
- 3. Discuss the significance of activation functions in the hidden layers of a neural network.**
- 4. Explain the choice of activation functions for different types of problems (e.g., classification, regression) in the output layer.**
- 5. Experiment with different activation functions (e.g., ReLU, Sigmoid, Tanh) in a simple neural network architecture. Compare their effects on convergence and performance.**