University of Thessaly

Neuro-Fuzzy Computing

ECE447

3rd Problem Set

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Problem 2

We are asked to write a Python program that implements steepest descent algorithm for the 1-S^1-1 RBF network. The input function that we want to approximate is

$$g(p) = 1 + \sin(p\pi/8), \quad \text{for } p \in [-4, 4]$$

We select 30 data randomly from that interval and all parameters are initialized as small numbers using `numpy.random.randn` function. It returns a number at the exact specification as needed.

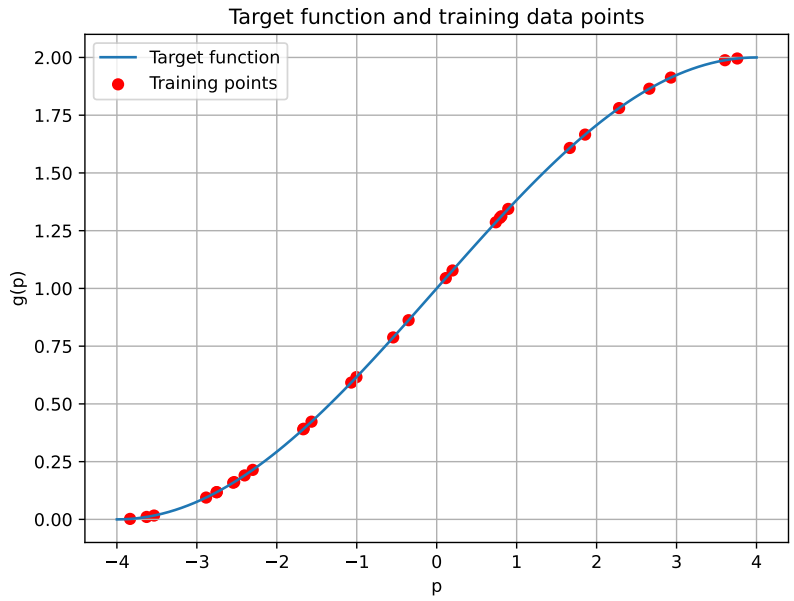

Figure 1: Input function in the specified area and the randomly assigned train data points.

For the randomly assigned data points, we added a custom seed number using in order for the results to be comparable but still use randomness.

Problem 8