

- 1.** Write a Python program to plot 6 common activation functions (Sigmoid, Tanh, ReLU, Leaky ReLU, ELU, Softplus) on a single figure with subplots. Each plot should display the function curve, its derivative curve, and annotate key properties like range and formula.
- 2.** Write a Python program to find the complement of a fuzzy set.
- 3.** Write a Python program to find the intersection of 2 fuzzy sets.
- 4.** Simulate a Cloud Environment using CloudSim and implement a FCFS Scheduling algorithm to assign cloudlets to virtual machines.
- 5.** Simulate a Cloud Environment using CloudSim and implement a Load Balancing Scheduling algorithm that assigns tasks to the least loaded virtual machine.
- 6.** Create two Ubuntu Virtual Machines & Configure SSH so that one VM can securely connect to the other.
- 7.** Train a neural network on the Housing dataset using the Sigmoid activation function in the hidden layer. Analyze its performance in terms of loss (MSE).
- 8.** Train a neural network on the MNIST dataset using Sigmoid activation function in the hidden layer. Analyze its performance in terms of accuracy and loss.
- 9.** Develop a Neural Network model for the Housing dataset using the Tanh activation function and observe its effect on prediction performance.
- 10.** Using a California Housing dataset, write a Python program to predict house prices using a neural network. Illustrate the forward pass, loss calculation (MSE), and backpropagation metrics.
- 11.** Develop an application to store employee details such as ID, Name, and Department.
- 12.** Create a web application that accepts marks of three subjects and calculates percentage and grade.
- 13.** Design and implement a neural network to predict house prices using the Housing dataset. Use relu activation function in hidden layers and evaluate model performance using Mean Square Error (MSE). Use two (2) connected remote Desktop (RDP) so that one VM can connect to the other.