Mechatronics Engineering and Automation Program
CSE473: Computational Intelligence
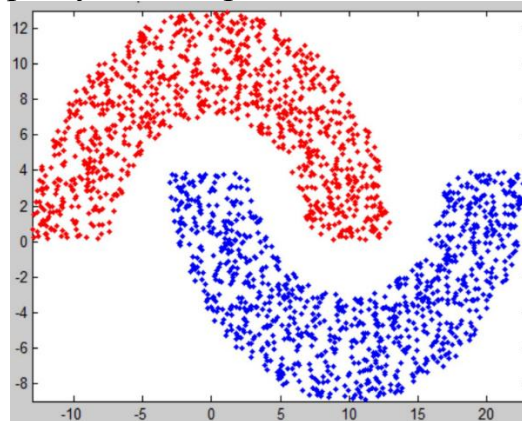Lab Assignment #05

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Assignment: Double Moon Data set and Binary Classification
Objective:
You will create a MLNN classifier for the double moon dataset with two-points categories (red and blue) pretty like the points visualized below.

Tasks:
1. **Create the data set as shown above.**
   o The number of points in the red class is N1 entered by the user.
   o The number of points in the red class is N2 entered by the user.
   o Label, training, validation, and test points.
2. **Train a linear classifier for the created data.**
   o Visualize the training and validation losses/error.
   o Visualize the decision boundary.
3. **Train a MLNN classifier for the created data.**
   o Visualize the training and validation losses/error.
   o Visualize the decision boundary.
4. **Dcompare between the two cases of 2 and 3.**

Submission:
- Submit your Python script (.py file) containing the implementation of the tasks above.
- Ensure your script is well-commented and includes any necessary explanations of your approach and results.

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