Readme

(60pt) Application of Kernel Methods in Ensemble Learning Across Various Learners: This assignment focuses on the innovative application of kernel methods beyond their conventional use in Support Vector Machines (SVMs). Kernel methods are powerful in mapping data into higher-dimensional spaces, enabling complex decision boundaries in various types of models. Students are tasked with exploring and implementing kernel methods in different types of machine learning models (not limited to SVMs) and then combining these kernel-enhanced models in an ensemble learning framework. The key challenge here is to integrate kernel methods in various learners and to understand how their combined effect improves the overall predictive performance
模型函式: model.py
執行檔案: train.ipynb
主要回答請搜尋第一題

(60pt) Ensemble of Deep Learning-Based Non-Tree Weak Learners: Traditionally, ensemble methods like Random Forests utilize tree-based models as weak learners. This assignment encourages exploring the use of deep learning models, specifically simple 2-layer Multi-Layer Perceptrons (MLPs), as weak learners in an ensemble. Students need to design an ensemble learning framework where multiple such MLPs are trained on different subsets of the data or features and then aggregated to form a more robust model. The focus should be on analyzing the strengths and challenges of using these non-traditional weak learners compared to standard tree-based models and how to effectively aggregate their predictions.
執行檔案: train.ipynb
主要回答請搜尋第二題