

循序最小化直推式支援向量機的研究

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摘要

支援向量機是以統計學理論為主的一種機器學習法則。支援向量機的設計能夠獲得較好的性能於在機器學習和資料探勘中。然而應用支援向量機的最大問題是資料不足或是很難收集，而且資料樣本可能會隨時間而改變。因此有許多學者提出不同形式的支援向量機，其中循序最小化直推式支援向量機(SMTSVM)是直推式支援向量機(TSVM)演算法其中之一。循序最小化直推式支援向量機有兩個重要的步驟為更新兩個無標示樣本資料的拉格朗日係數與計算其經驗風險。假如經驗風險遞減時，則我們在這兩個無標示樣本資料中選擇較高的鬆弛變數改變，否則增加調整函數的值並重新訓練樣本資料。為能驗證循序最小化直推式支援向量機的效率與有效性，本文測試線性可分離/不可分離的資料的分類及USPS樣本資料，並且與直推式支援向量機、PTSVM、及線上直推式支援向量機等，比較其效率。

關鍵詞：支援向量機、直推式支援向量機、循序最小化直推式支援向量機

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