使用預測法之高容量可逆資料隱藏演算法

沈詠睿、張世旭

E-mail: 321474@mail.dyu.edu.tw

摘 要

可恢復式的影像資料隱藏技術可在提取隱藏資訊後，並能還原出原始影像。文獻中使用直方圖修改法的資料隱藏技術，其將資料嵌入具有相同差值絕對值之像素中，藏入量與相同差值出現的次數有關，當相同差值出現次數越多則藏入量越大，因此本論文提出以預測法提高預測值的準確度，使差值的絕對值可高度集中在‘0’或‘1’的位置上，使具有相同差值的像素增加，進而提高藏量。 當輸入掩護影像之像素x減去使用預測器產生預測值 可產生差值di，之後統計|di|的直方圖，找出直方圖中具有最高波峰值的|di|為p。替代影像的灰階值為y，將隱藏資料嵌入具有|di|為p的像素中；若|di|大於p的像素中則y為x做一加減常數；若|di|小於p的像素中則y等於x。若嵌入後或改變後像素的灰階值大於或等於255；或像素的灰階值小於或等於0，將灰階值設成255或0值，並額外記錄灰階改變量。當預測器使用JPEG-LS時，平均藏量為56K位元時，掩護影像的品質PSNR平均為49.31dB。在相同的平均藏量下， 證明本論文的方法比其他可恢復式的影像資料隱藏技術擁有更高的影像的品質

關鍵詞 : 可還原資料隱藏、JPEG-LS、直方圖、差值、CALIC

目錄

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