

偵測移動車頭燈以進行夜間車流分析

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摘要

臺灣目前是世界經濟高度發展的國家之一，國內的車流量更是一年比一年還要多，對於車流量監控系統的需求也就日益增加，而夜間車流監控系統也是近年來車流量監控系統上一個非常重要的主題，在影像處理學術界上也是一個新興的領域；國道大量使用智慧型運輸系統(intelligent transportation system, ITS)來監控交通量，而國道的監視器因為要做長時間監控，且要對夜間環境進行監控，所以都配備紅外線功能，極為昂貴。是以本研究希望能透過智慧型運輸系統結合一般監視器材，以夜間環境與國道為主，來進行夜間車流分析。本研究以RGB值捕捉燈源並判定該燈源是否有移動特性，來判斷該光源是否為車燈，每個車輛至少有兩個車頭燈，故必須將捕捉到之燈源做分群，來判斷被分群之燈源為一台車，以此計數。本研究以國道為主拍攝了15段道路監控影片，在本研究的結果顯示，監視器材上成功降低將近75%的成本，在車流量偵測率上也有91%的正確率。

關鍵詞：智慧型運輸系統、夜間車流分析、車輛燈源分群

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