夜間微弱光源環境下之多物體移動追蹤

林昀鈺、曾逸鴻

E-mail: 9607624@mail.dyu.edu.tw

摘 要

隨著經濟逐年發展，個人住家安全也日益受到重視，如何應 用平價的視訊擷取設備，做到限制空間之人員出入與移動監控， 是近年來電腦視覺領域的研發重點。建構一個智慧型視訊監控系 統，除了可節省人力成本，並可提供即時的監控與警示。 目前的智慧型視訊監控系統，多應用在日間或明亮的環境， 但多數犯罪活動都發生在昏暗的夜晚期間。因此，本研究主要針 對室內環境的夜間安全監控，使用平價且普及的網路攝影機作為 視訊擷取設備，發展可應用於夜間的視訊監控系統。本系統除了 可改善光線不足所造成的前景物體偵測不佳外，並著重在處理夜 間環境下的多移動物體追蹤。首先，畫面影像經過改良式亮度均 衡化後，可得到較清晰的影像。利用背景相減方法，可擷取出前 景物體。抽取每個前景物體影像的顏色與位置等特徵後，利用比 對持續記錄的穩定與移動特性，即可對不同前景物體做移動追蹤 。實驗結果顯示，本研究所開發的系統可以有效地在昏暗環境下 進行多物體追蹤，驗證了本研究所提方法的可行性。

關鍵詞 : 智慧型視訊監控系統， 亮度均衡化， 背景相減 ，多物體追蹤

目錄

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