夜間穩定微弱光源之移動物體偵測與陰影去除

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摘 要

目前在生活環境中，以錄影設備來監控環境的應用已逐漸普及，多數錄影監視器大多 架設於社區巷口、便利超商、大樓門口等位置，也有些裝在車站、銀行等的室內環境，然 而居家環境的視訊監控也有極大的需求。目前的監視錄影大多為提供事後分析追查的功能 ，且對於在日間犯罪的遏止較有效果，而在室內夜間環境下，由於光線不足，環境昏暗， 在偵測可疑人物的效果令人無法滿意，且物體的陰影容易受到光源角度的不同而明顯變化 ，對於前景物體的精確位置偵測有較大的影響。 本研究針對夜間固定式微弱光源環境下，發展智慧型視訊監控系統，使用平價且普及 的網路攝影機，作為視訊擷取設備，固定式微弱光源將著重在一般家庭常使用的夜間天花 板夜燈、牆壁壁燈及捕蚊燈。我們的系統首先應用背景相減方法取得前景物體，再將前景 物體的內部破洞及邊緣破碎進行修補。而後利用亮度變化，找到可能的光源位置，再利用光源與物體的相對位置，將前景物體的陰影去除，以減少陰影之影響，實驗結果取得良好 的物體偵測效果，驗證了本研究所提方法的可行性。

關鍵詞 : 移動物體偵測，夜間視訊，陰影去除，背景模型

目錄

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