People counting using multi-mode multi-target tracking scheme

連振昌,黃雅麟,韓欽銓
Computer Science & Information Engineering
Computer Science and Informatics
cclien@chu.edu.tw

Abstract

Conventional video surveillance systems often have several shortcomings. First, target detection can't be accurate under the light variation environment. Second, multiple target tracking becomes difficult on a crowd scene. Third, it is difficult to the partition the tracked targets from a merged image blob. Finally, the tracking efficiency and precision are reduced by the inaccurate foreground detection. In this paper, the fusion of temporal and texture background model, multi-mode tracking scheme, color-based difference projection, and ground point detection are proposed to improve the abovementioned problems. In addition, we propose a people counting scheme based on the multi-mode multi-target tracking method on a crowd scene. Experimental results show that the targets on the scene may be detected robustly with the rate above 10 fps and counted with the accuracy above 90%.

Keyword：Multi-mode multi-target tracking, People counting