

V. Demianiuk, Bachelor student
A. Koval, PhD in Engr., As. Prof, research advisor
S. Kobzar, Senior lecturer, language advisor
Zhytomyr State Technological University

BASIC IMPLEMENTATION OF MOTION DETECTION

The security cameras have been used for a long time. In the course of their development they have gone a great path beginning from the gadgets which used a lot of memory, wasted time and were not ergonomic in general till highly technological modern equipment. On the market of surveillance devices they were replaced by the motion detection cameras. A motion detection camera is a camera that can be activated by detecting motion, by turning on the flood light, starting the alarm or even recording. The detection can be done by measuring the speed or the vector of the objects in the field of view [1].

Raspberry Pi 2 (a small single-board computer), Raspberry Pi Camera Module v2 and Passive Infrared sensor (PIR) were used for the creation of the motion detection system. This computer is the main module for image capturing and processing. The camera plugs directly into Raspberry Pi and delivers 5 MP image resolution; 1080p, 720p, 480p video recording [2]. A highly effective, low-cost technology for detecting unauthorized activity by monitoring changes in infrared heat patterns in the area under observation. The PIR sensor detects the change in temperature and triggers when an unauthorized object enters the perimeter. It can turn an alarm or security recording on. The great advantage of the PIR detection systems is a small memory bank that receives the amount of infrared energy typically focused on its surface when there is no activity in the area [3].

Current system operates as follows: PIR sensor executes motion detection, camera executes image capture, and Raspberry Pi executes data processing. System analysis showed that PIR sensor has a number of disadvantages, such as necessity of special conditions for the arrangement, range of motion detection and probability of false alarms. So, it was decided to remove it from the system and to implement camera-based algorithm for recognition of alive objects.

REFERENCES

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