

ABSTRACT

The sophistication of a gadget to take images frequently encountered by digital cameras. Most users holding the gadget to do the shooting. This habit can reduce user comfort gadgets for shooting. Such as when the user is walking around and wanted to do the shooting without having to login and logout gadgets continuously.

The wishes to make an application is aimed for taking pictures within finger blocking and without holding the gadget can be realized by using image processing supported by Matlab Compile Runtime. In this final project will undertake the design and implementation of image retrieval tool using fingers attached colored markers and followed using a Particle Filter. The marker as a trigger for shooting automatically when the user's finger has stopped moving and shooting in accordance with the specified rectangle.

The final project is getting a system that is able to perform automatic image retrieval based on the stop marker conditions and perform performance analysis for tracking with Particle Filter. Test result get the best accuracy when using the optional parameter Xstd_rgb, Xstd_pos, Xstd_vec and Npop_particles as equal to 20, 30 and 30 with accuracy is 91%. Although the accuracy is reduced to 57% when the marker get noise with similar colors. Moreover, the testing with different colors (red, green, yellow) has an accuracy equal to 91%. The tracking is able to perform well when the light intensity in range 10-263 lux. This research resulted in the value of MOS 4 for applications in Matlab R2012b.

Key word : image processing, image picture, hand blocking, Particle filter, Matlab Compile Runtime.