

## ABSTRACT

The development of more advanced age, the authors would like to try a new system in digital signal processing. This system is a system of Single Board Computer (SBC), the author would like to use a Beagle Board as a medium for digital signal processing. The idea of using the Beagle Board, the writer got from Bandung Tecno Park (BTP). At this time, concentration of Bandung Tecno Park is researching this single board computer embedded system to be implemented on digital signal processing in the form of video, voice and images.

Beagle Board is a Single Board Computer (SBC) based on TI OMAP3530. OMAP3530 TI (Texas Instruments' Open Multimedia Application Platform) is a platform developed by Texas Instruments for multimedia applications based on embedded ARM Cortex 8. Such as computers, the Beagle Board has features as owned by a computer, such as a USB port, serial connection, audio-video output, etc.. Beagle Board here can process digital signals in the form of images, sound, and video. However, the authors would like to try to process digital signals in the form of an image on the Beagle Board, more precisely focused to perform color detection.

Color detection is performed based on the principle of color image. The principle is the principle of image color image used for color images. Color detection is used to view the performance of ARM Cortex-A8 on Beagle Board as digital signal processing and signal processing will be used as a sensor of the camera eye on the humanoid robot. Eye sensor serves to detect the colors of the rules relating to the Humanoid Robot Contest as red, blue, green, yellow, orange.

**Key Words :** *Image Processing, Color Image, Beagle Board, ARM Cortex-A8, Webcam.*