Application of Artificial Neural Network and Background Subtraction for Determining Body Mass Index (BMI) in Android Devices Using Bluetooth

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Abstract : Body Mass Index (BMI) is one of the different ways to monitor the health of a person. It is based on the height and weight of the person. This study aims to compute for the BMI using an Android tablet by obtaining the height of the person by using a camera and measuring the weight of the person by using a weighing scale or load cell. The height of the person was estimated by applying background subtraction to the image captured and applying different processes such as getting the vanishing point and applying Artificial Neural Network. The weight was measured by using Wheatstone bridge load cell configuration and sending the value to the computer by using Gizduino microcontroller and Bluetooth technology after the amplification using AD620 instrumentation amplifier. The application will process the images and read the measured values and show the BMI of the person. The study met all the objectives needed and further studies will be needed to improve the design project.