

## ABSTRACT

*Sleep is an important activity in human life that functions to restore the body's energy. The quality of sleep achieved determines the quality of human life because it is one of the factors or benchmarks for fulfilling one's sleep needs. Factors such as emotional condition, daily activity load, movement during sleep and physical condition are things that affect the level of human sleep quality. This study discusses movements that occur during sleep as a preliminary study in building the human sleep system.*

*One of the most popular sleep monitoring devices in the medical world is polysomnography, which is a device that is integrated into a sleep monitoring system in a hospital. This tool works by attaching electrodes to the patient's body. Having the sensor attached to the patient's body makes the patient feel uncomfortable and disturbed during sleep. This is a system shortage because it interferes with the sleep monitoring analysis process.*

*In this study, a system that can capture a person's movements without wearing any device on his body is designed. By utilizing a Microsoft Kinect V2 sensor that can capture all joint movements in the human body. The number of subject movements was calculated during sleep monitoring experiments for 15 minutes calculating the euclidean distance displacement. Joint displacement can be detected and the amount can also be calculated.*

*This system is expected to be able to initiate research monitoring of patients experiencing sleep disorders and post-anamnesis analysis conducted by experts in observing the link of certain diseases to the position or type of joint that moves during sleep.*

*Keywords: sleep activity, polysomnography. Kinect, movement, Euclidean distance*