

## **ABSTRACT**

Accelerometer and gyroscope are very widely used in the development of current technology. One of the uses of accelerometer and gyroscope sensors is to recognize patterns of activity in the elderly. However, the signals from the two sensors have a lot of noise so we need a denoising method to reduce the noise from the signals of the two sensors. Many researches have developed methods for denoising the accelerometer and gyroscope sensor signals, but previous researches still produce SNR values that have not been optimal for accelerometer and gyroscope signals. This research offers a complementary filter algorithm for denoising the accelerometer and gyroscope signals. This research will compare Kalman filter and Complementary filter. It is expected that the Complementary filter algorithm can produce a good SNR value for the accelerometer and gyroscope signals.

**Keyword:** Denoising, Complementary Filter, Accelerometer, Gyroscope, Kalman Filter