

## ABSTRACT

*A wheelchair is one of the mobility aids for people with disabilities. In this day and age, many patients find it difficult to operate a manual wheelchair, so they experience obstacles in terms of mobility. Efforts to facilitate user mobility can be done by applying technology to wheelchairs. The goal to be achieved in this study is to apply an Artificial Intelligence (Google Assistant) system to the design of a wheelchair so that it can facilitate user mobility.*

*Design and implementation of smart wheelchairs based on voice commands and medical parameters using (Google Assistant). The navigation system with voice commands can run the wheelchair movement automatically using the wall following method. The system uses a MAX30100 sensor module with outputs in the form of pulse and Spo2. The system uses pulse rate as a wheelchair speed parameter.*

*In this study, we succeeded in synchronizing the Google Assistant system with the Raspberry Pi 4 with an accuracy of 95.56% and getting the results of pulse rate and respiratory saturation with an error value of below 5%. Mobility testing is carried out using the wall following method with an average error of 0.1% for each mobility. This study uses a QR code as a marker for each room and takes about 1.25 – 2.44 seconds to recognize the QR code using a webcam camera.*

**Keywords:** *disability, Google Assistant, MAX30100, ultrasonic, QR code, wheelchair.*