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Bridging the Gap Between Intent and Movement: A Review of Accelerometer-Based Wheelchair Control Systems

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Abstract: *There are currently 15% of people on the planet who are disabled in one way or another. Mobility incompetence is the most common type of impairment among the others. Frequent complication that has a major impact on the patient's day-to-day life. Attaching the patient to a standard wheelchair is the standard method. Unfortunately, because the user will always need help from others, it doesn't give them a taste of independence. This device can be manually operated, but it will require a significant amount of physical exertion on the part of the user. Significantly less work can be done with a smart wheelchair that has multiple driving modes. Using two different driving systems—a thumb and a gesture control system—we designed a smart wheelchair for this study. The user can quickly traverse the menu and select their chosen control system thanks to the User Interface (UI) design. It includes a heart rate sensor to calculate. The patient's medical status. A notification will be sent to the concerned party using the built-in response mechanism in the event of an emergency.*

Keywords: Accelerometer sensor, Heart rate sensor, Arduino Uno, Gesture