

Project Proposal

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Project Title: Voice-controlled wheelchair	
Description: <p>Quadriplegic patients face several monumental challenges. Perhaps the most significant challenge they have is controlling personal mobility devices. With this in mind, we propose a voice-controlled wheelchair. The patients can use contemporary machine-learning techniques to manage their mobility aids with their voices. Thus, mobility and the mental and personal well-being of people with quadriplegia are improved.</p>	
Aims and Objectives: <p>In this project, there are three sections that we focus on:</p> <ul style="list-style-type: none">• Voice recognition is used to detect and classify specific control words.• Automatic mobility device for improving the movement of quadriplegic patients.• Human-centered collision avoidance policy for a safety-critical machine	
Resources Required (hardware & software): <ul style="list-style-type: none">- A Physical Wheelchair- Arduino Uno- Arduino Voice recognition- 2 Stepper Motors- 12V lead acid battery- Proximity Sensors- Hand Tools- Arduino IDE Software- MATLAB	
Budget (estimated component costs): <p>We estimate this project being around 1000 euros.</p>	