# Project Proposal

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| **Student Name: Student number:**  Nhat Long Van Pham S00205143 |
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| **Project Title:** Voice-controlled wheelchair |
| **Description:**  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. |
| **Aims and Objectives:**  In this project, there are three sections that we focus on:   * 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):**   * 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):**  We estimate this project being around 1000 euros. |