**Topic: Smart wheelchair controlled by voice commands**

**Team Members:** Gul Meeri Irfan, Adelina Almazova

**Objective:** To build a wheelchair that can be controlled by voice using the microphone attached to the wheelchair or by using an application that will use the microphone of the mobile phone.

**Supervisor:** Prof. Dmytro Zubov

**Project Summary:** As we know that handicapped people are not able to locomote without the help of someone. Therefore, for our final year project we want to build a wheelchair that can easily be accessed using voice control. For the first part of the project we will use a microphone attached to the wheelchair prototype via a microcontroller, which will process the voice commands given and convert them to instructions understandable to the machine. As for the second part we will build an android application which will convert human speech to instructions for the prototype.

**Approximate things we require:**

1. Arduino UNO;
2. Voice Recognition Module for Arduino UNO;
3. Wheelchair Chassis Kit/Robot car chassis kit;
4. Bluetooth Module HC-05;
5. L293D Motor Shield;
6. Ultrasonic Sensor HC-SR-04;
7. Battery 12V or maybe less;
8. 2 DC Motors (12V 200 rpm);
9. Microcontroller Atmega328;
10. Power supply.

**Links:**

* <https://www.researchgate.net/figure/Flowchart-for-User-Voice-Command_fig3_324201994>;
* <http://www.ir.juit.ac.in:8080/jspui/bitstream/123456789/15910/1/123010.pdf>;
* https://www.researchgate.net/publication/324201994\_Voice\_Controlled\_Wheel\_Chair\_System.