ACS322/ACS420: Individual Project – Aim and Objectives

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| Project Aim:  The Aim of the project is to create a proof of concept and thus a model that takes human gestures as an input, processes it and remote controls a car based on that input. The focus of the project would be to use gestures as an interface. |
| **Project Objectives:**  Basic Objectives:   1. To perform a background research on gesture control and displaying relevant data received from the interfacing device to the user on a laptop screen. 2. Specifying the configuration of different parts of the system which include the interfacing device, the computing device on the remote controlled car, the communications protocol to allow 2-way communication where needed and the programming language used for the processing and analysis of the data received by the laptop. 3. Defining the types of movements and control of the remotely controlled car. 4. Designing the mechanism of the system which will include an interfacing device between the user and the machine. The data is then received, processed and analysed and then suitable data is shown to the user as a visual feedback. The recognition of these hand gestures is then done and the necessary instructions are forwarded to the remotely controlled car via a virtual private network. A simple algorithm in the raspberry pi checks the instructions and proceeds to follow them to make the directed movements to the car. 5. Cost estimation is done after taking into consideration all the materials that will be needed for the manufacturing of the car and the hardware needed for each step of the data analysis. Finding UK suppliers for the sourcing of the components. 6. Processing the data received by the Interfacing device and generating a simple textual feedback for the information recording.   Advanced Objectives:   1. Convert the raw data received into 3-D graphical display for the user. 2. Analysing the data received from the Leap motion controller and transferring the relevant data to the raspberry pi via the virtual private network. 3. Building the remote controlled car according to the configuration decided in the basic objectives. 4. Writing software to send relevant information to the remote controlled car for further instruction following protocols. 5. Testing the final system and making necessary minor changes for the optimisation for the same. |

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| **Please attach (as an additional sheet) your project work plan in the form of Gantt chart** |

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| Student name (Print): Kshitij Goel Date: 20th October 2015 |

### E:\Sheffield\Year\Year 3\Semester 1\ACS 322 Individual Project\Work in Progress\Gantt Chart\KshitijGoelsFYP_A3_1.jpgGantt Chart (Day View)

#### E:\Sheffield\Year\Year 3\Semester 1\ACS 322 Individual Project\Work in Progress\Gantt Chart\KshitijGoelsFYP_A4_week.jpgGantt Chart (Week View)