

## Project Proposal – ITCS 6151

### Title: Pick and Placer Robot

**Idea:** I want to implement this project in several phases, so that my end robot would be able to pick up and place the objects from and into the specified locations by doing a path planning such that it efficiently avoids the obstacles in space while performing the task.

Phase1: In this phase I would like to implement a robot arm that simply picks and places the objects in a free space without any obstacles and thus with no path planning or simple path planning like drawing a straight-line path.

Phase2: In this phase I would like to add some obstacles in the environment so that now my robot must use some path planning methods and perform the task by avoiding them. For path planning method, I would like to use RAMP algorithm.

Phase3: In this phase I would like to make the base of robot movable and try to achieve the above 2 functionalities.

Phase4: In this phase I would like to implement all the 3 functionalities with a 3D robot or spatial manipulator.

### Deadlines:

Phases	Deadline
Phase-1	4/12/2017
Phase-2	4/20/2017
Phase-3	4/20/2017
Phase-4	5/2/2017

**Implementation Details:** I am going to use one of the OpenGL binding to java i.e., Light Weight Java Gaming Language (LWJGL) for simulation (graphics) and java8 to code the functionality of the robot. I am going to use both with help of Eclipse IDE.