Bryan Walther

Unified Robotics II

Block Diagram

Pick and Place Robot Arm

Hardware

Software

Mechanical

Electrical

Arduino Code

C#/EmguCV code

Structural Members

Motors/ Actuators

Limit Switches

Arduino Uno

L298n Motor Controllers

Block Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Subsystem Name | Block Name | Descriptions | Expected Cost | Expected Completion Date | Developer |
| Software | Arduino Code | The software to be run on the micro controller itself. Given inch coordinates and an angle of the shape and calculate the required steps of the arm, then instruct the L298n's to move to the correct positions | $0.00 | Dec 8th, 2018 | Me |
| C# Code | The Software to be run on a separate laptop. Responsible for vision processing, locating the shapes, and calculating their positions from the base of the robot. Then send the coordinates via Serial communication to the Arduino board. | $0.00 | Dec 8th, 2018 | Me |
| Mechanical | Physical Structure | Constructed out of Laser cut Acrylic and metal rods. Using skateboard bearing and a turntable bearing for mobility | $50.00 | Oct 17th, 2018 | Me |
| Actuators and Limits | 2 17Ncm pancake steppers connected to a threaded rod for the arm motions. 1 45Ncm stepper connected to the base of the robot for turning the structure. | $45.00 | Oct 17th, 2018 | Me |
| Electrical | Wiring and controllers | 1 Arduino Uno, 3 L298n dual motor controllers | $16.00 | Nov 21st, 2018 | Me |