Unified Robotics II

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Robot Purpose:

Pick-and-place robot – Identify, acquire and sort shapes, and put them into a predetermined location based on shape. Operation environment is a laboratory setting, closed system with minimal outside disturbances to the system. Program does not require prior knowledge as the system is autonomous. When starting up, open Visual Studio 2017 and load the program. Press ‘ALT+S’.

Note:

Code is incomplete and robot is non-functional. Known issue: improper communication between C# program and Arduino code.

Development summary

EMGU.CV and C# programming to process visual information. Locate centroid of each body based on the contours of its outline and mark it with a different color.

Utilize serial communication in conjunction with Arduino to control servomotors and move pieces of robotic arm. Connect Arduino UNO to the mechanical frame and upload the Arduino code.

Mechanical Structure failed and requires redesign. Original design of winches and a hose clamp to rotate is not structurally sound. Additionally, cannot properly affix the screw to a servomotor to rotate the arm body.

Code problem. Deleted problematic portions causing program crash. Program compiles. Work on code will continue.