Project Title

Project Summary and Goals

Ernest Selman
macid@mcmaster.ca
0000000

Eric Le Fort
leforte@mcmaster.ca
1308609

Guy Meyer
macid@mcmaster.ca
0000000

Andrew Danha
macid@mcmaster.ca
0000000

Max Moore
macid@mcmaster.ca
0000000

Derek Savery
macid@mcmaster.ca
0000000

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Figure 1: Revision History

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1 Project Summary

The aim of this project is to create an automated pool playing robot. This robot will be able to play pool against a human opponent for recreation or training purposes as determined by the user.

What follows is a breakdown of what the system will do step-by-step in more specific detail. To initiate the robot's turn, the user will press a button signifying that the system should begin. A camera will then be used to view the table and, using visual recognition algorithms, map out the positions of the pool balls. Our system will then determine the best angle at which to take a shot and how to move the equipment to that position. Once that is done, the robot will move into place, lining up the shot. Using a specialized, built-in pool cue, the robot will then make its shot.

Once it is the user's turn, the user will also be able to press a button to indicate to the robot that it needs to move in order to give room for the human player's shot. The robot will then move to a position that is out of the way.

2 Success Criteria

In order for the project to be considered a success, minimum criteria must be met. These minimums are that:

1. 90% of the time a straight shot will have the cue ball hit the intended ball, and;
2. 50% of the time, the system should be able to sink the intended ball.

3 Mid-Level Goals

4 High-Level Goals