Virtual Ping Pong

Checklist

The Checklist is broken up into sections that each of us will work on. Components that we would like to complete, but may not due to technical complexity and time constraints, are marked with an asterisk.

1. Vision System (Mark)
   a. Stores camera data to ZBT to be used by drawing
   b. Stores this data in RGB*
   c. Detects paddle pixels and filters out non-paddle pixels based on coloring
   d. Performs basic calculations on paddle pixels to find the corners of the paddle
   e. Performs more advanced calculations to determine tilt and velocity
   f. Outputs tilt on two axes and has a robust velocity detector so that you can swing the paddle with the same freedom and response you would in real life*
2. Game Logic (Zach)
   a. Draws game interface with background and ball
   b. Projects ball from 3D (X,Y,Z) coordinates into a 2D pixel coordinate system
   c. Ball bounces realistically off of walls and paddle
   d. Ball bounces off of paddle realistically based on paddle tilt and velocity*
   e. Back of playfield is replaced with feed from camera to show opponent*
   f. Multiplayer is implemented so that two labkits can play against each other*