1a. It will encounter tennis ball, people and border. Various of tennis ball data will be needed for recognition training. The challenges it will face is that it must find the same ball from its left eye and right eye, otherwise it will not catch the ball correctly because there is more than one ball in the field. In its world, the world consists of two separate photos, it can only reconstruct the stereo world through algorithm.

1b. take photos using left eye and right eye->find a ball and match it in both photos on a scanline-> calculate Z using similar triangles->go to the coordinates we have calculated->grab the ball->return to the original location-> do the victory dance-> take photos again and repeat.

1c.

1d. At each position(x,y,z), the robot take a picture first and then it will need to move a certain distance (x,y,z) + t to the right, then take another picture, and go back to the position(x,y,z). Now, we have baseline t and two photos, so in this way we can pretend the robot has its other eye(lens) back. If the robot cannot move a certain distance or the rotation and distance it moves are unknown, the it may not be able to complete its task after losing an eye.

2a.