

Motion Prediction of a Ping Pong Ball

**Eileen Salhofer,
Felix Warmer**

27. November 2017

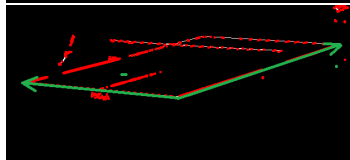
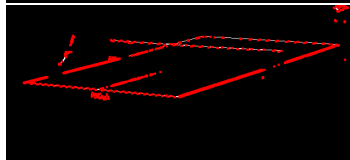
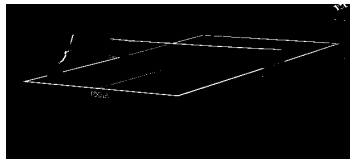
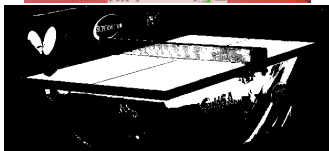
Problems Overview

- Data and Conditions
- Finding the Ping Pong table
- Finding the Ping Pong ball
- Calculating the current position of the ball
- Calculating the future position of the ball

Data and Conditions

- Prerecorded videos mostly from tournaments.
- Static camera.
- Evenly illuminated room.
- Good resolution.
- Few objects with the color of the table or ball.
- Side view with no blocking objects.

Finding the Ping Pong table



Finding the Ping Pong Ball

- Use background subtraction to find moving objects.
- Use color thresholding to find the Ball.



Calculating the current position of the Ping Pong ball in relation to the Ping Pong Table

- Use table corners to calculate relative position of the camera.
- Calculate the relative position of the ball in the scene.

Calculate the future position of the ball

- Use two frames and the motion blur to calculate the moving direction of the ball.
- Calculate the speed of the ball through position change between frames.
- Use speed and direction to calculate future position of the ball.



Questions?

Thank you for your attention