

Homework #3

- Out: Thursday February 12, 2015
- Due: Thursday February 26, 2015

*HCI/CprE/ComS 575: Computational Perception
Iowa State University, Ames, IA*

For all problems described
below refer to the videos posted
on the class web page.

Traffic Monitoring (Part 1)

- Write a program that counts how many cars, busses, and pedestrians pass by.
- In your output videos put a bounding box around each of the objects as they are tracked. Also, for each frame display a text counter (e.g., 3/2/1 which stands for 3 busses, 2 cars, and 1 pedestrian).
- Your program must work with at least 2 of the provided sample videos.

Traffic Monitoring (Part 2)

- A) For each input video generate a separate output video which shows only the busses in this video. You can use the initial frame in the video as the default background which can be displayed instead of frames in which no busses are detected.
- B) For each input video generate a separate output video which shows only the cars that went by **from left to right** in that video.

Where is the Ball? (Part 3)

- A) Write a program that tracks the position of the orange ball in the movies with two cups. Create an output video which shows the position of the ball even when it is under one of the cups. You can assume that once a ball is covered by a cup it will move in the same way as the cup. Your program must work with at least 2 of the sample movies.
- B) Do the same for the videos with three cups.

That's it.

Good Luck!