

CSE473/573 Summer 2017 - Homework 5

Due Date: 24th Jul 2017

July 16, 2018

1 Visual Tracking - 50%

Please watch the below videos on Kalman filtering and answer the questions

1. <https://www.youtube.com/watch?v=ul3u2yLPwU0> What simplistic assumption is made regarding the car model? What are the causes of error in x_k and y_k ? How do we get the optimal estimate for the car's position? - 25%
2. <https://www.youtube.com/watch?v=VFXf1lIZ3p8> Describe briefly about prediction and update steps of Kalman filtering after watching this video. Discussion on equations is optional for credit but is recommended - 25%

2 Object Detection and Recognition - 40%

1. Describe step-by-step how you would detect circles of radii between 50 to 70 pixels in an image using hough transform - 20%
2. Describe briefly about deformable part models (DPMs) and the steps involved in training them - 10%
3. What are Eigen faces - 10%

3 Submit Course Evaluation - 10% (Free credit)