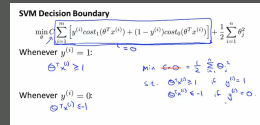
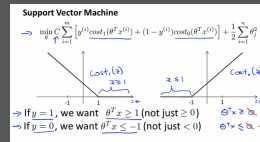
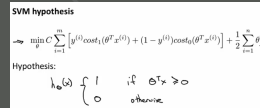
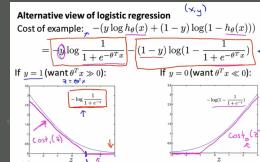


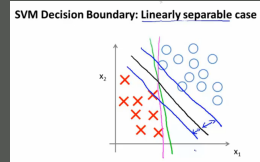
## SVM (support vector machine classification)

分支主题 2

optimization objective

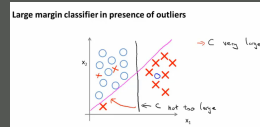


task: let the first term equal to 0

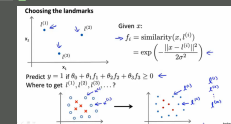
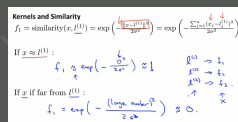
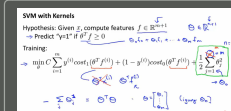


large margin classifier

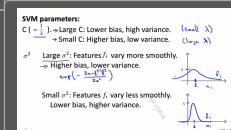
the black line gives the SVM a certain robustness as it tries to separate the data with as a large margin as possible



when C is very large SVM would be susceptible to the outliers: when C is not too large it works well despite the outliers or few nonlinear cases

landmarks: the location of the  $x$ 

kernels (核函数)

large C: overfit  
small C: underfit  
large sigma^2: underfit  
small sigma^2: overfit

kernels

