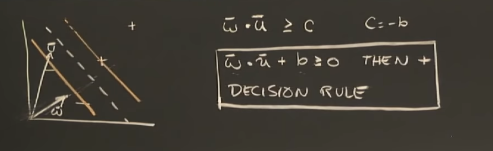
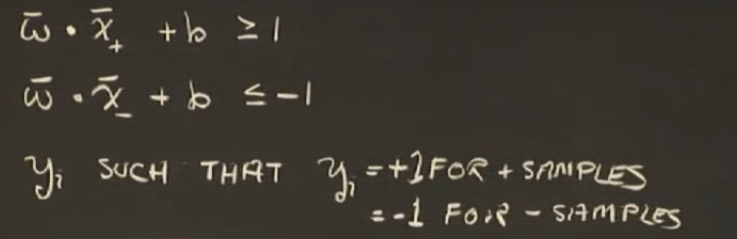
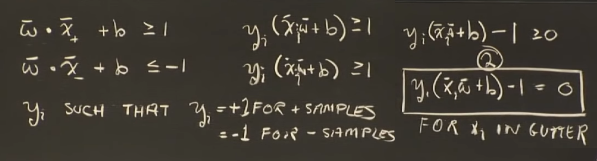
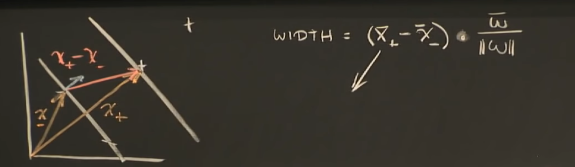
Support vectors

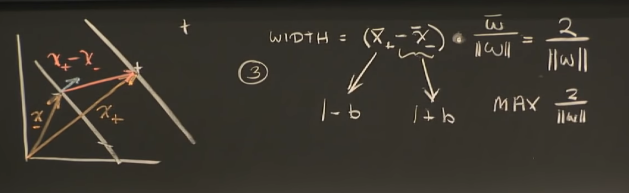
Functional margin and geometric margin

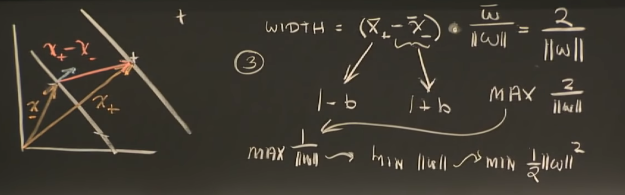




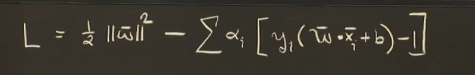






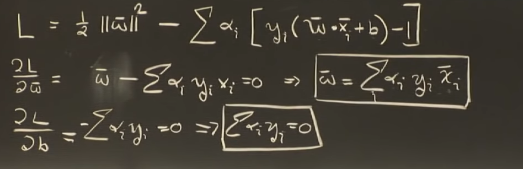


Optimization of a function with given constraints:



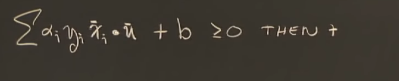
Method of langrage Multipliers will be used to transform the “given function with constraints” to another equivalent “function without constraints” that function and can be optimized (maximise or minimize ).

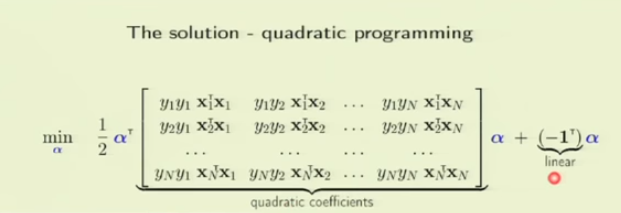
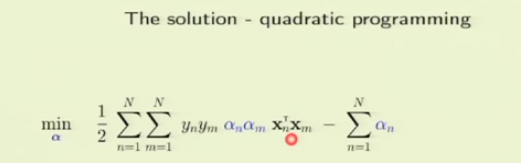


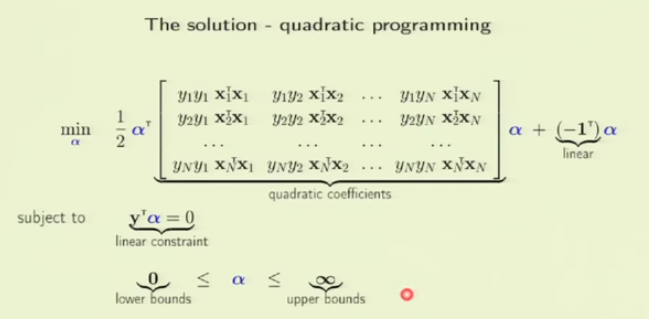


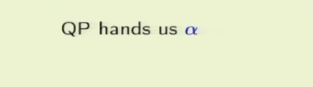


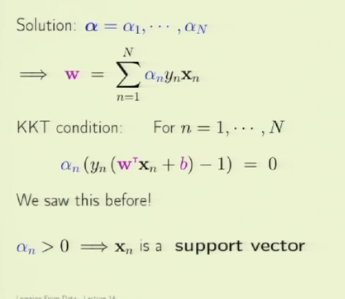
Now we are trying to find out maximum of above L function.



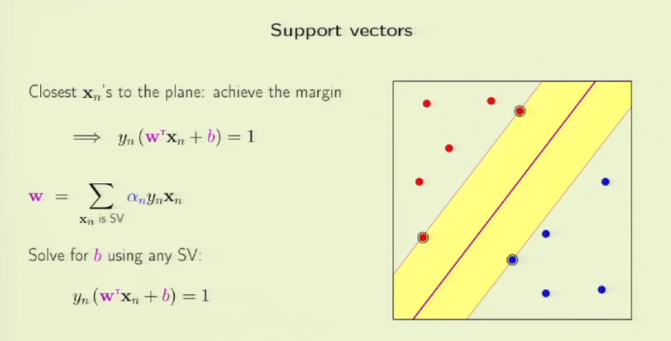




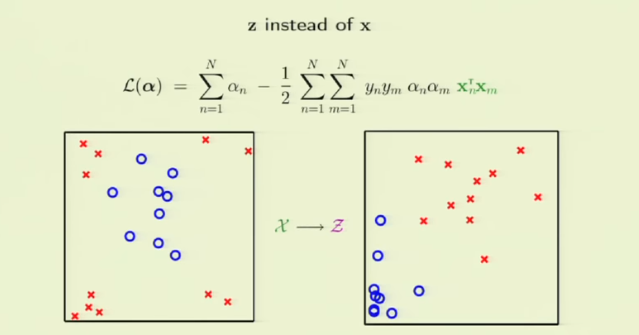


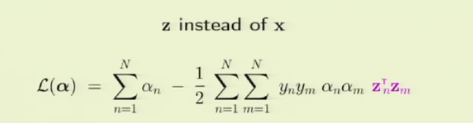


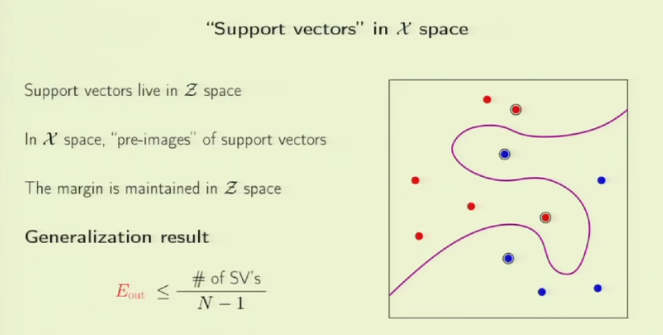


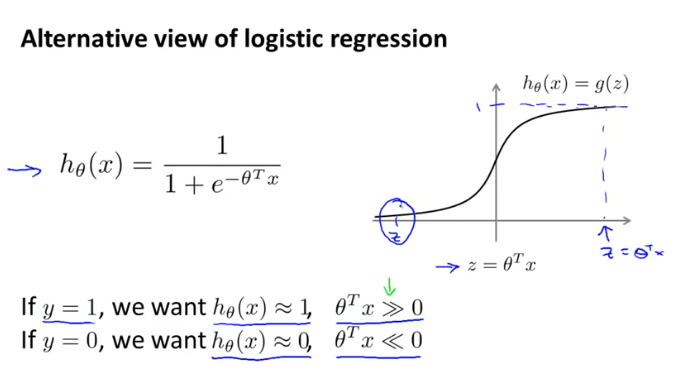


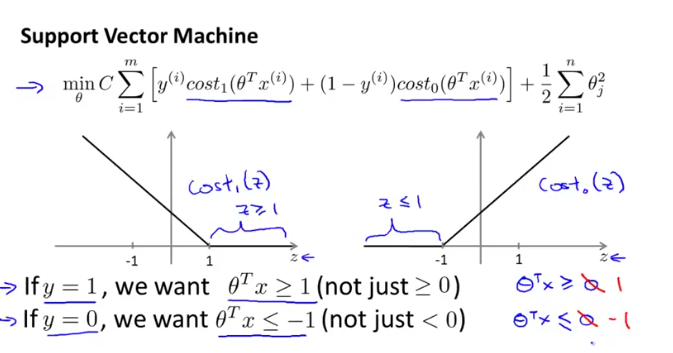
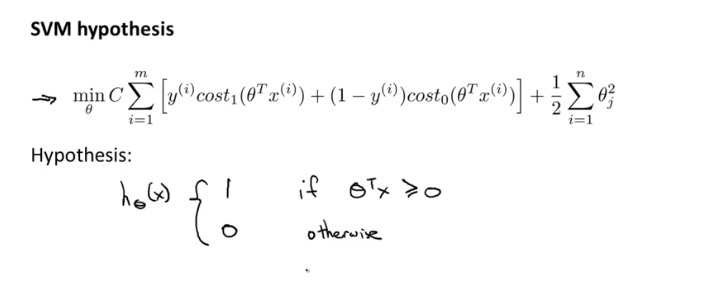
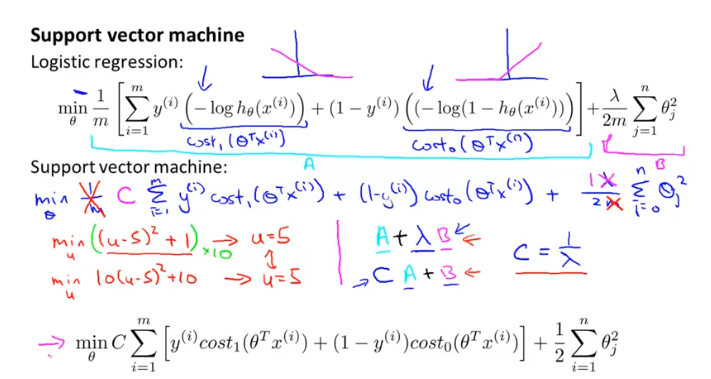
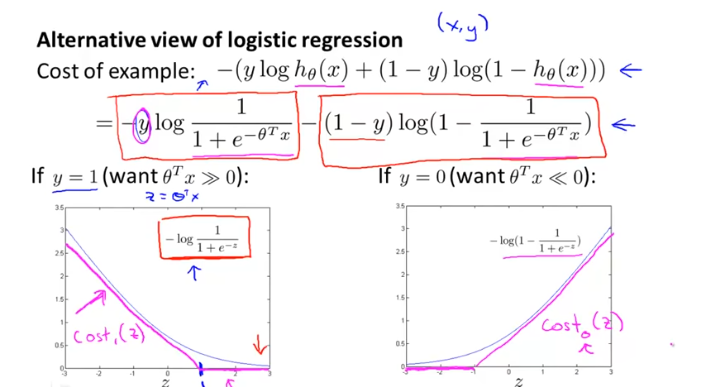
**Non Linear Transformations:**

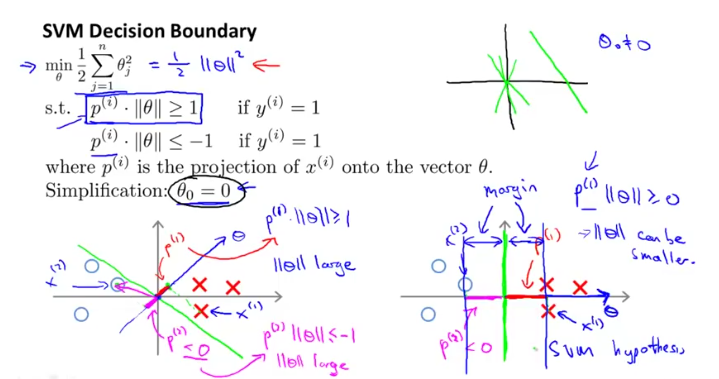
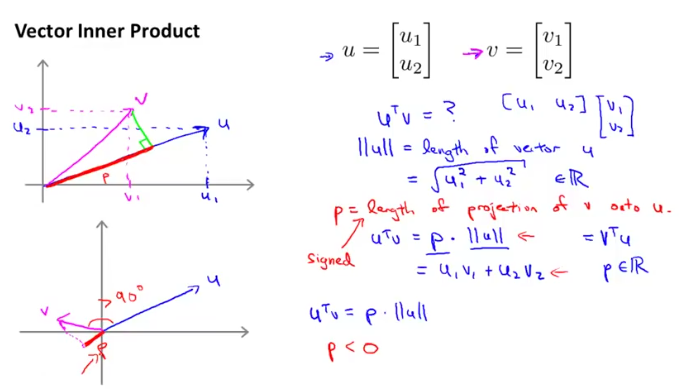
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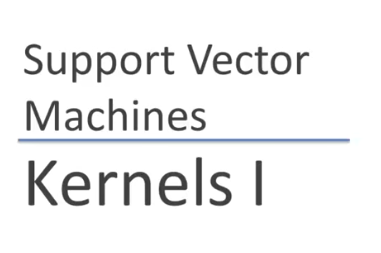
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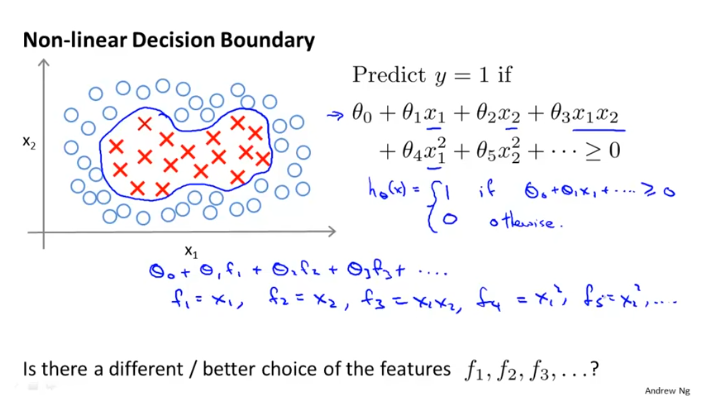
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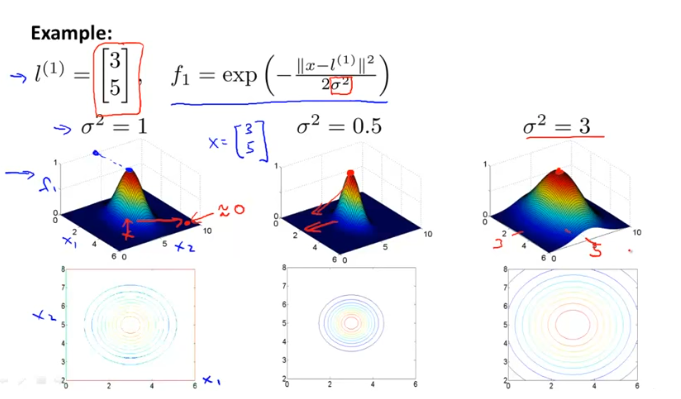
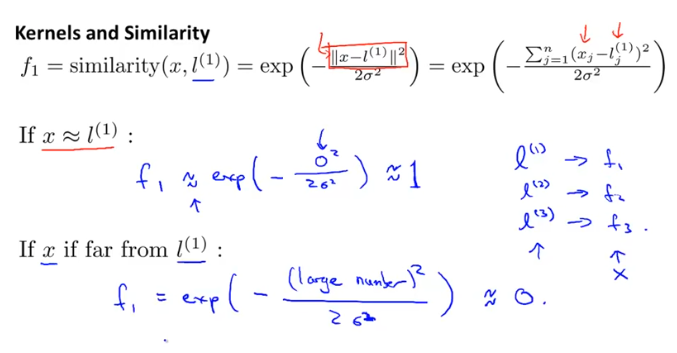
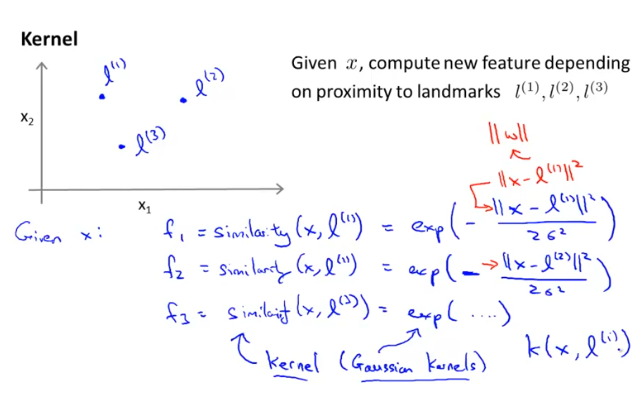


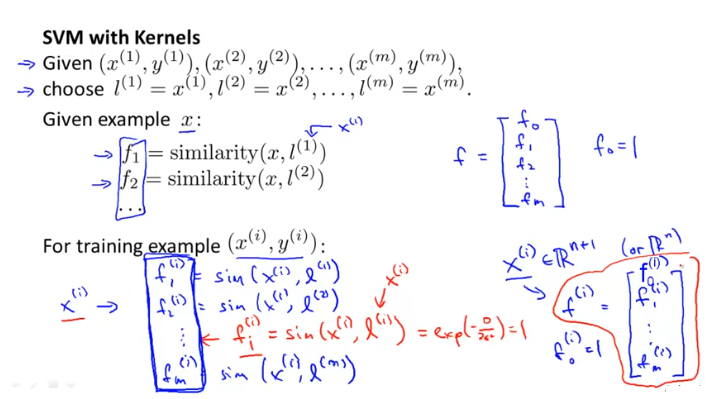
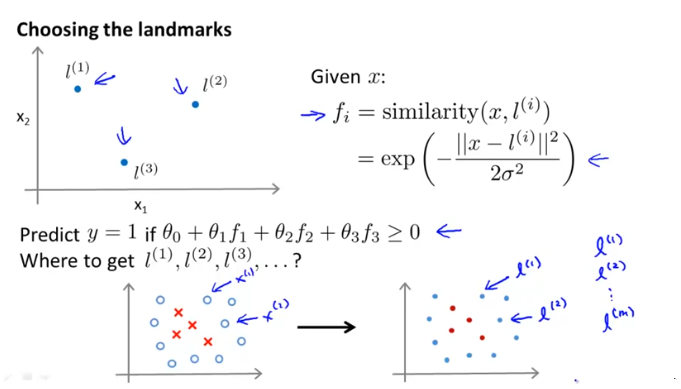
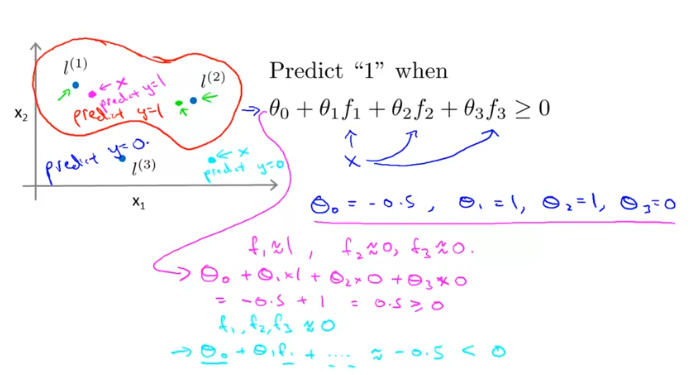


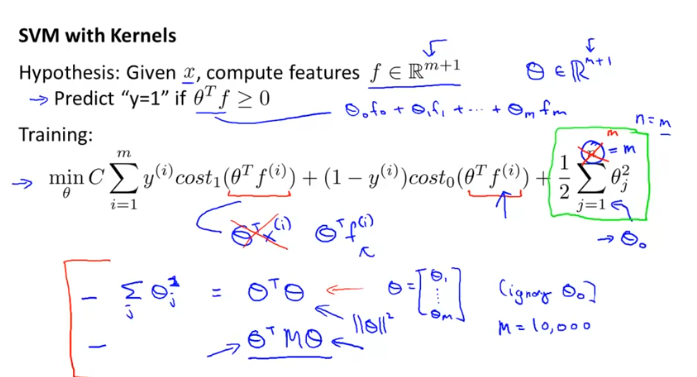


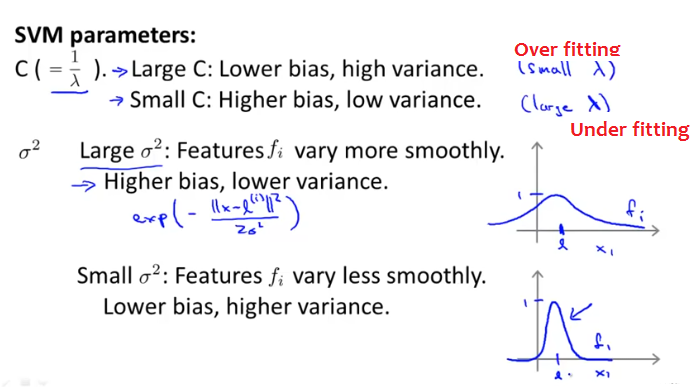


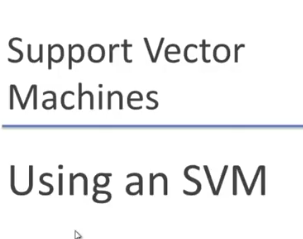


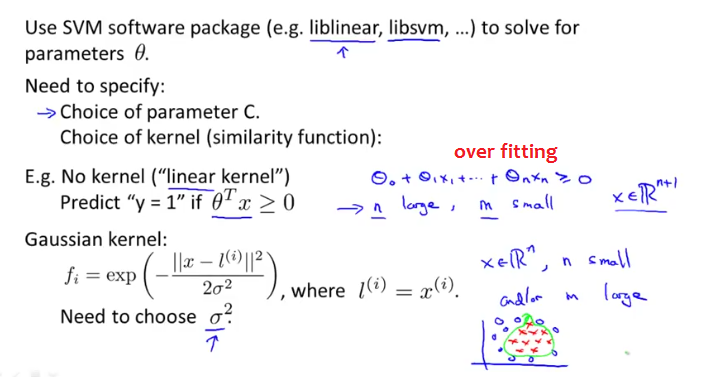


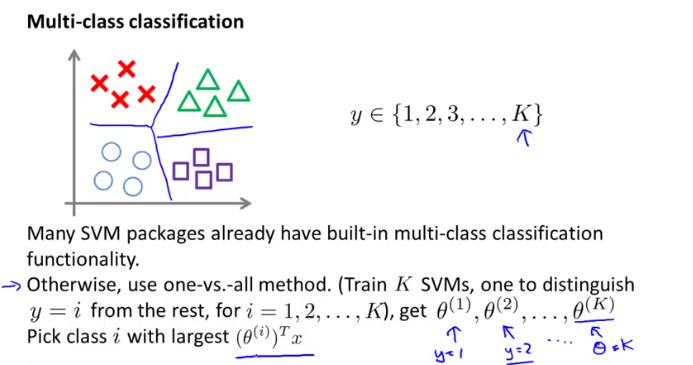
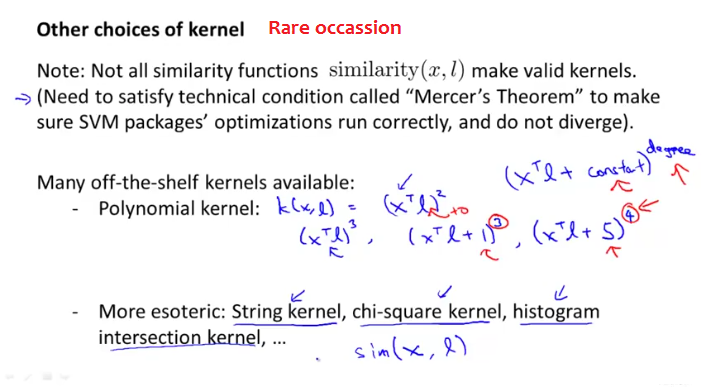
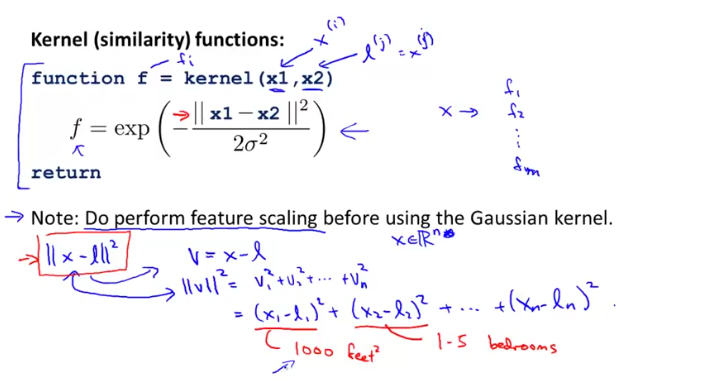


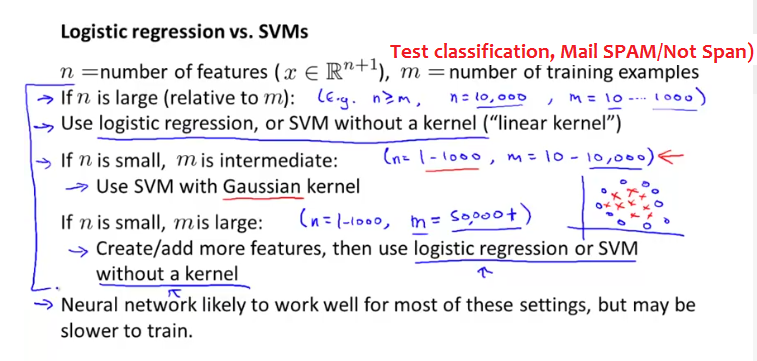








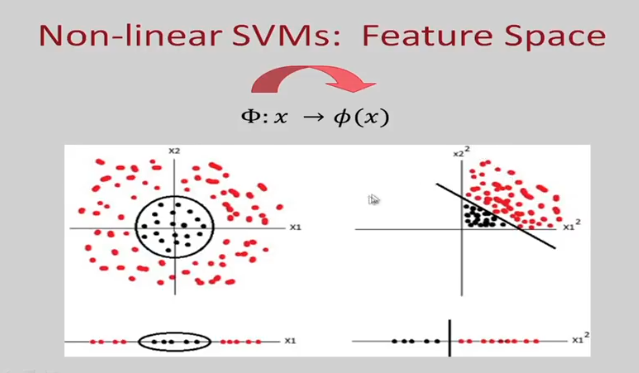
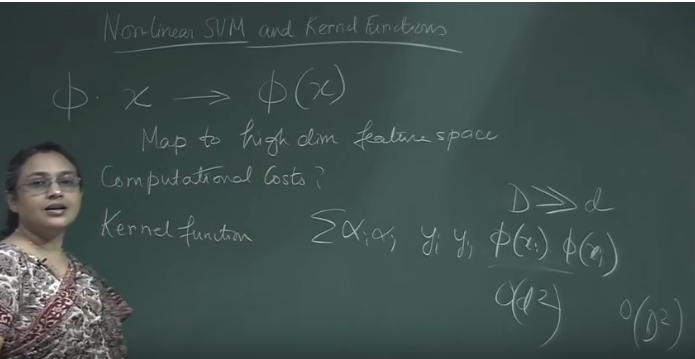
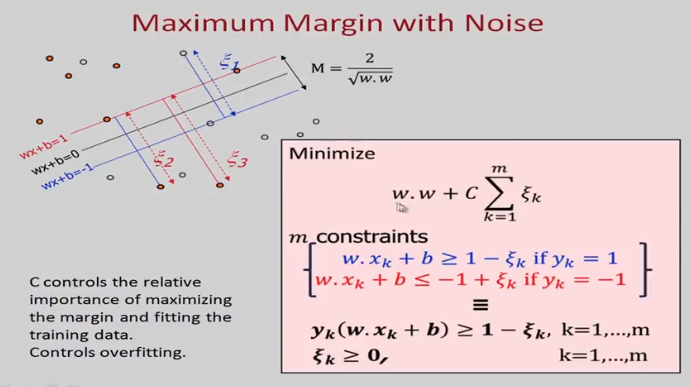
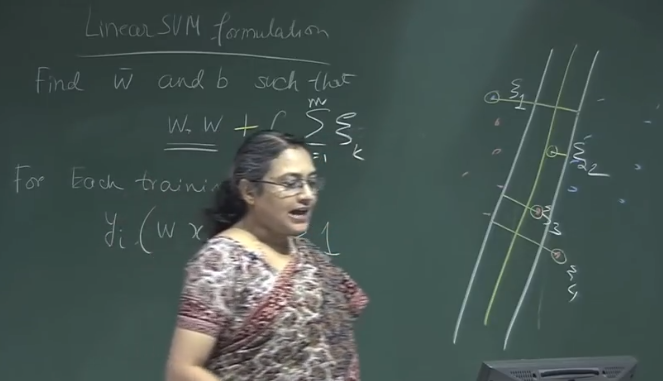


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**In majority of the cases, logistic regression and SVM without kernel behave in a same way with approx same performance. Can choose any one**

**SVM optimization always finds a global minima or approx global minima.**

**SVM: Maximum Margin with Noise**

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