Practice Midkun 2010



4.) One-llas SVM min 1 WW

s.t. uTx(i) >1

= S ga = - ~ x (1) + 1 60

=>[(u,x): 2 u u - {x; [uxx"-1]

=> Pullund = W - Z x; x = 0

=) U = E X; X

II.

=> II. 15 I:

 $L(\omega_{j}x) = \frac{1}{2} \sum_{i=1}^{m} \sum_{j=1}^{m} \alpha_{i} x_{j} \times \sum_{i=1}^{m} \sum_{j=1}^{m} \alpha_{i} \alpha_{j} (x_{j})^{T} \times \sum_{i=1}^{m} \alpha_{i} \alpha_{i} (x_{j})^{T} \times \sum_{i=1}^{m} \alpha_{i} (x_{j}$

+ 2 X;

=> L(u,x) = \(\int \alpha \); \(\frac{1}{2} \) \(\frac{1}{2} \)

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(4) Can the one-clys SUM be Kenelized?
Yes, became we only you immer probable to bean and led

convex optimitation constraints are independent.

=> Maximize U(d) wit x:

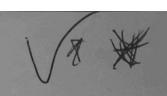
Q: W(x) = 1 - \frac{1}{2} \frac{x}{x} \langle \langle

 $= \frac{1}{2} \sum_{i=1}^{m} \frac{1}{2} \times_{i} \cdot (x^{(i)}, x^{(i)}) + \times_{i} \cdot (x^{(i)}, x^{(i)})$

 $\frac{x_{i-1}-\sum_{j=1}^{i}x_{j}(x_{j}(x_{j}))}{\sum_{i\neq j}x_{j}}$

(x(1) x(1)

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$$\frac{Q(y^{(i)}|x^{(i)},0)}{p(y^{(i)}|x^{(i)},0)} = \frac{1}{2\pi^{2}} \exp\left(-\frac{(y^{(i)}-0^{2}x^{(i)})^{2}}{2\sigma^{2}}\right)$$

$$\frac{Q(y^{(i)}|x^{(i)},0)}{2\pi^{2}} = \exp\left(-\frac{Q_{1}^{2}}{2\pi^{2}}\right)$$

Practice Midken 2010 -> To maximile UD, need to minimie: 1 = E (y(i) - O(T) x(i)) 2 + 1 = E O; 2 dans Ignore frank Je Getter Rey are fixed =) need to minime vedle => Pelo)=1Po=2(XO-i)(XO-i) +V=0.0 = - (X X O - X 1) + - 0 Jan A Take: Ou - F-5 => \$ (0.5 · X × · O - S · X · j + J · O = 0 Fr. I = J => S.XT.X.O+J.O= S.XT.y => S. XT.X + J = S. XT. Y. Q-1 y'X + 5-1 (XT)-1 y=0-1 = SQ = X'Y + J'Y - X'S 0: x'y+5-'5. x7.y)