

✓ What is/are advantage(s) of Locally Weighted Regression? \*

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- ☐ (A) Pointwise approximation of complex target function
- ☐ (B) Earlier data has no influence on the new ones
- ☒ (C) Both A & B
- ☐ (D) none of these



✓ The quality of the result depends on (LWR) \*

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- ☐ Choice of the function
- ☐ Choice of the kernel function  $K$
- ☐ Choice of the hypothesis space  $H$
- ☒ All of these



✓ Algorithm step used by locally weighted regression. \*

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- ☐ 1. Given training data  $D=\{x_i, y_i\}$ , Kernel function  $K(\cdot, \cdot)$  and input  $x$
- ☐ 2. Fit weighted regression  $w^{\wedge}(x) = \operatorname{argmin}_w \sum_{i=1}^n K(x, x_i) (w^T x_i - y_i)^2$
- ☐ 3. Return regression prediction  $w^{\wedge}(x)^T x$ .
- ☐ 4. Fit weighted logistic regression  $w^{\wedge}(x) = \operatorname{argmin}_w \sum_{i=1}^n K(x, x_i) \log(1 + \exp\{-y_i w^T x_i\})$
- ☐ 5. Return logistic regression prediction  $\operatorname{sign}(w^{\wedge}(x)^T x)$ .
- ☒ step 1, 2, and 3 ✓
- ☐ step 1, 4 and 5
- ☐ step 1, 2, 4, and 5
- ☐ all the 5 steps need

✓ True-False: Is Logistic regression a supervised machine learning algorithm?

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- ☒ True ✓
- ☐ False



✓ What is “K” in KNN algorithm? \*

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- ☐ K = Number of nearest neighbors you want to select to train the class of a given item
- ☐ K = Number of nearest neighbors you want to select to test the class of a given item
- ☐ K = Number of nearest neighbors you want to select to cluster the class of a given item
- ☒ K = Number of nearest neighbors you want to select to predict the class of a given item ✓

✓ Disadvantages of KNN \*

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- ☐ Does not work well with large dataset:
- ☐ Does not work well with high dimensions:
- ☐ Need feature scaling
- ☐ Sensitive to noisy data, missing values and outliers
- ☒ all the above ✓



✓ How do we decide the value of “K” in KNN algorithm? \*

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- ☐ 1.K should be the square root of n .
- ☐ 2.. K should be odd so that there are no ties. If square root is even, then add or subtract 1 to it.
- ☐ 3.1 and 4
- ☐ 4. K should be even so that there are no ties.
- ☒ 1 and 2



✓ Which of the following distance measure do we use in case of categorical variables in k-NN? 1.Hamming Distance 2.Euclidean Distance 3.Manhattan Distance \*

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- ☒ 1
- ☐ 2
- ☐ 3
- ☐ 1 and 2
- ☐ 2 and 3
- ☐ 1,2 and 3



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