3. Introduction to Non-linear Classification

Exercises due Mar 8, 2023 08:59 -03 Completed

Introduction to Non-linear Classification

0:00 / 0:00 1.0x

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Counting Dimensions of Feature Vectors

0/1 point (graded)

Let $x \in \mathbf{R}^{150}$, i.e. $x = \left[x_1, x_2, \ldots, x_{150}\right]^T$ where x_i is the i-th component of x. Let polynomial feature vector.

Thus, $\phi(x)$ looks like:

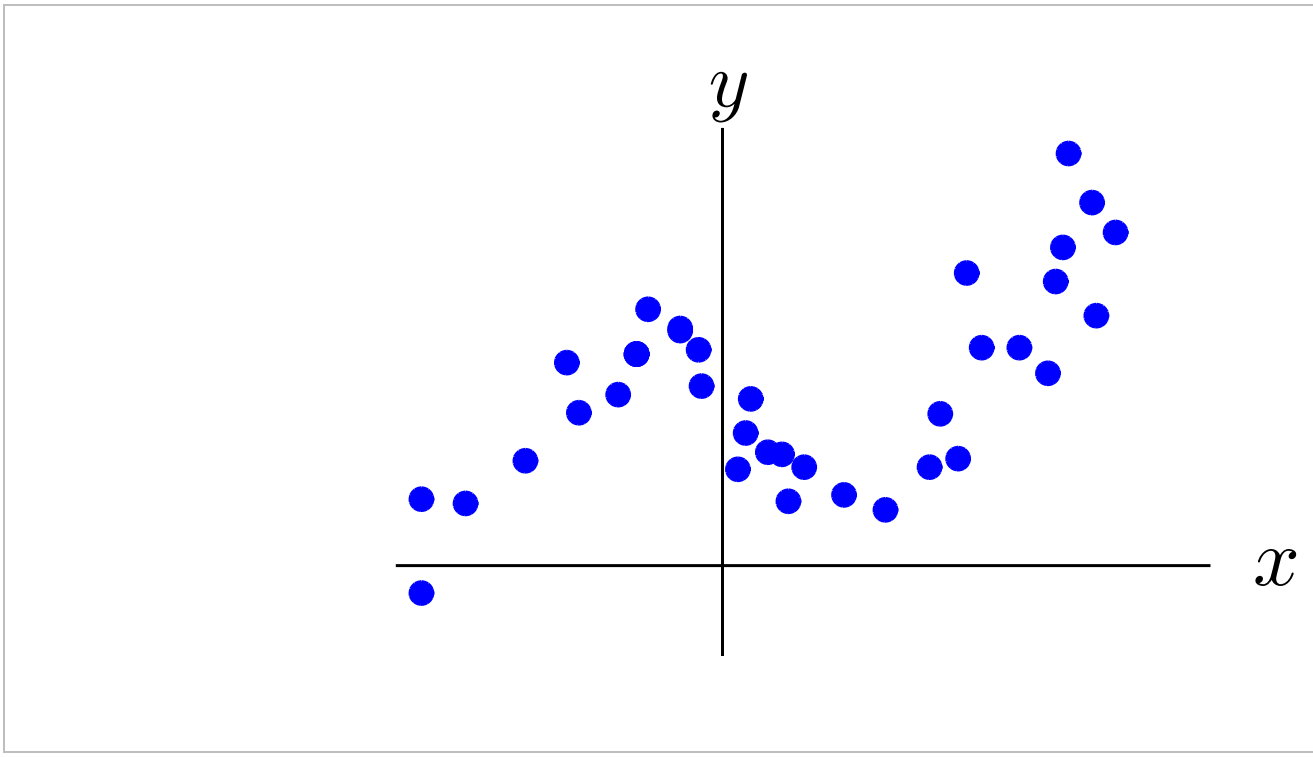
$$\phi(x) = [\underbrace{x_1, \ldots, x_i, \ldots, x_{150}}_{\text{deg } 1}, \underbrace{x_1^2, x_1 x_2, \ldots, x_i x_j, \ldots x_{150}{}^2}_{\text{deg } 2}, \underbrace{x_1{}^3, x_1{}^2 x_2, \ldots,}_{\text{de}}$$

Note that the components of $\phi(x)$ forms a basis of the space of all polynomials with z of degree at most 3.

What is the dimension of the space that $\phi(x)$ lives in? That is, $\phi(x) \in \mathbb{R}^d$ for what d

1/1 point (graded)

Assume we have data points in the training set where example:



A biochemist is considering the depicted data and we're helping them.

We want to find a non-linear regression function that predicts from , given by

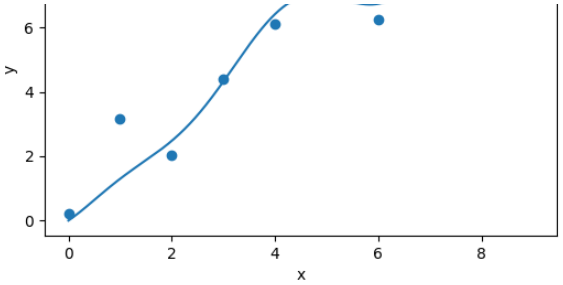
where is the polynomial feature vector that includes all and only the monomials o this case, since has dimension , this means has components; the degree- redundant with the bias term , but that doesn't matter for this problem). What degree recommend the biochemist use? Note that this is a soft, not-completely-mathematical question, 'Does Louisiana look more like a boot or a mitten?' — there's consensus here the terms involved, even though it's a soft question. Common sense and human experie engineering, so this question is fair game.

3 ✔

Submit You have used 1 of 2 attempts

Effect of Regularization on Higher Order Regression

2/2 points (graded)



Which figure above corresponds to the smallest regularization parameter ?

- (•) A
- ( ) B
- ( ) C

✔

Which figure corresponds to the largest regularization parameter ?

- ( ) A
- (•) B
- ( ) C

✔

‹ Previous Next ›

Formula runs off screen

Once again, we've been given a formula that runs past the right edge of the screen. There is no scroll bar. Sc

Can someone assist with the Regression using Higher Order Polynomial feature?

Isit I have to plot the graph to any order which is most similar to the one in the picture then minus 1 to get the

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