Math 342W Lecture 14

 $\frac{1}{2} = \frac{1}{2} = \frac{1$

$$X_{\text{raw}} = \begin{bmatrix} x_{11} \\ x_{12} \\ x_{1n} \end{bmatrix} \xrightarrow{\text{Feature Transform}} X = \begin{bmatrix} 1 & x_{11} & x_{11} \\ 1 & x_{12} & x_{12} \\ \vdots & \vdots & \vdots \\ 1 & x_{1n} & x_{2n} \end{bmatrix} \Rightarrow \vec{b} = (\vec{x}^T \vec{x})^{-1} \times \vec{y}^T$$

Machine Learning: Supervised learning with a complex 22

$$\hat{y} = b_0 + b_1 x + b_2 x^2$$

$$= b_0 + (b_1 + b_2 x) x$$
Differential slope

$$\hat{y} = b_0 + b_1 x + b_2 x^2$$

$$= b_0 + (b_1 + b_2 x) x$$

$$= b_0 + (b_$$

Other feature Transformations can be performed so long as they are not linear transformations => 015 can't support this

$$x_{raw} = \begin{bmatrix} x_{11} \\ \vdots \\ x_{1n} \end{bmatrix} = 7 + \frac{\ln(x_{11})}{\tan s \cdot \sin a + \cos a} = 7 \times = \begin{bmatrix} \ln(x_{11}) \\ \vdots \\ \ln(x_{1n}) \end{bmatrix} = 3\hat{y} = b_0 + b_1 \ln(x_1)$$

Log Transformations also have a nice property that in a small neighborhood of 2 they approximate percent change (+/-).

In(x) x x-1=> b, 1 In(x)=b,(In(x+)-In(x0))=b,(In(禁)) x b,(禁-1) =7 b,(裝-1) = 1. Change