No.

Date. / /

Homework 2

1. logistic func: $P(z) = \frac{e^z}{1+e^z}$

$\cancel{\ln(P(z)) = \ln\left(\frac{e^z}{1+e^z}\right)}$

$\cancel{= \ln(e^z) - \ln(1+e^z)}$

$\cancel{z = \ln(P(z)) - \ln(1+e^z)}$

$\cancel{z + \ln(1+e^z) = \ln(P(z))}$

$\cancel{z = \ln(P(z)) - \ln(1+e^z)}$

$z = \ln\left(\frac{P(z)}{1+e^z}\right)$

$P(z) = \frac{e^z}{1+e^z}$

$\cancel{x = \frac{e^y}{1+e^y}}$

$P(Z) = \frac{e^z}{1+e^z} \Rightarrow e^z = (1+e^z)\,p$

$\cancel{\ln(P(z)) = \ln\left(\frac{e^z}{1+e^z}\right) = \ln(e^z) - \ln(1+e^z)}$

$= \frac{(1-p)e^z = p}{z} \Rightarrow (1-p)e^z = \frac{p}{(1-p)}$

$= \ln(e^z) = \ln\left(\frac{p}{1-p}\right)$

$\Rightarrow z(p) = \ln\left(\frac{p}{1-p}\right)$

2. $\frac{p}{1-p} \Rightarrow \frac{e^{(\beta_0+\beta_1(x_1+2))}}{e^{\beta_0+\beta_1 x_1}} = e^{2\beta_1}$

increases by a multiplication of $e^{2\beta}$

It approaches 0 as $x_1 \to \infty$ and 1 as $x_1 \to -\infty$

$\left(\frac{1}{1+e^{\infty}}\right) = 0 \qquad \left(\frac{1}{1+e^{-\infty}}\right) = 1$

No.

Date. / /

Fundamentals of the bootstrap

1. $(1 - 1/n)^n = P$ (j not being included in a bootstrap sample)

2. $(1 - 1/1000)^{1000} \approx 0.3677$ roughly $1/3$

estudee

Scanned with CamScanner