COL774 Assignment 1

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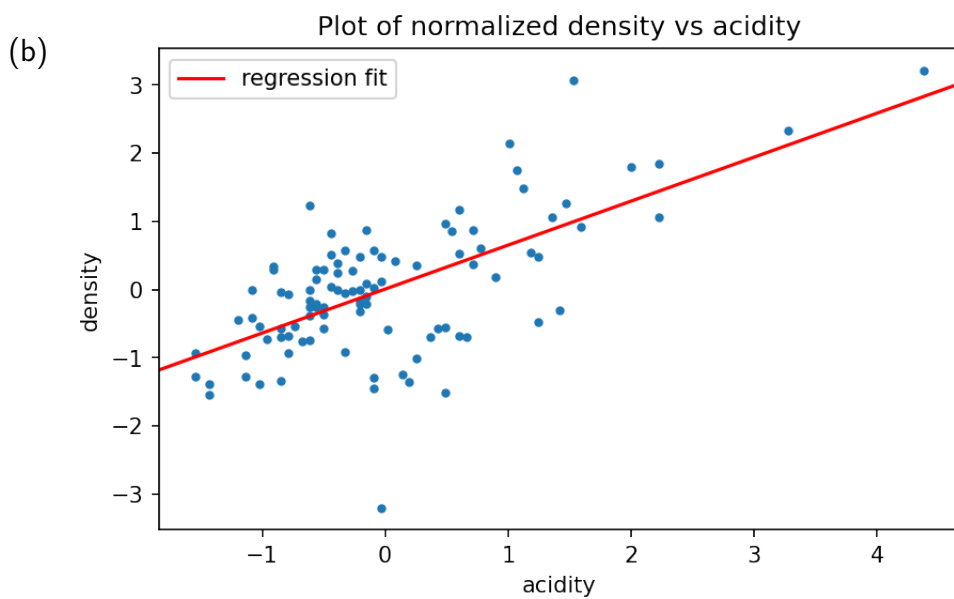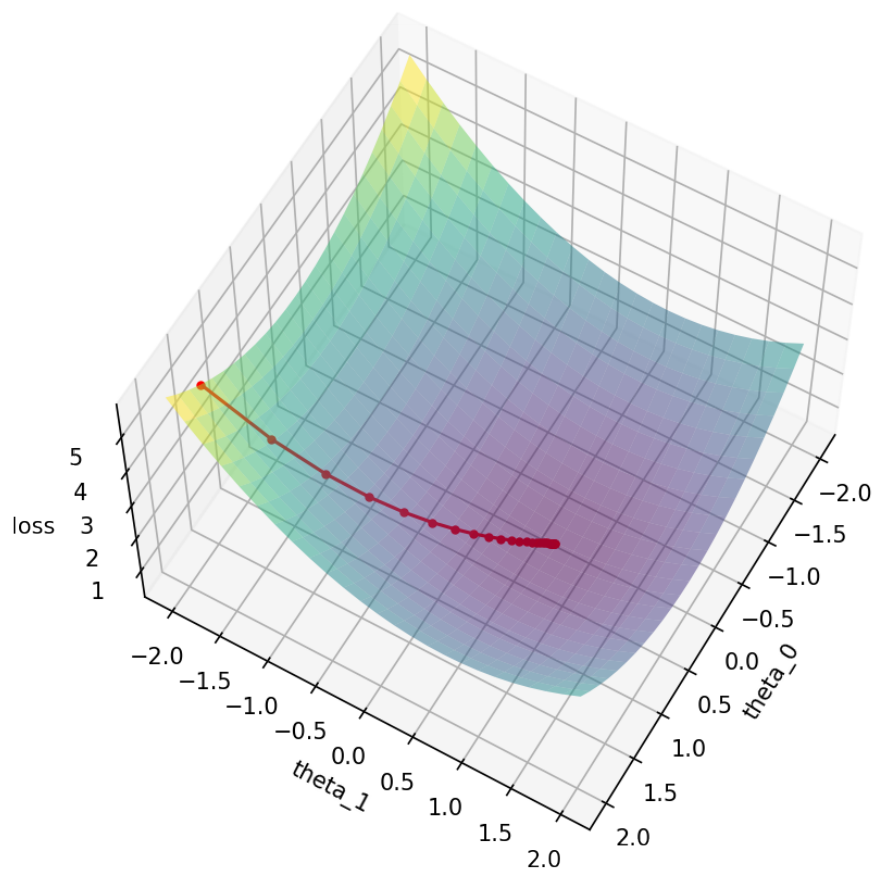
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Linear Regression

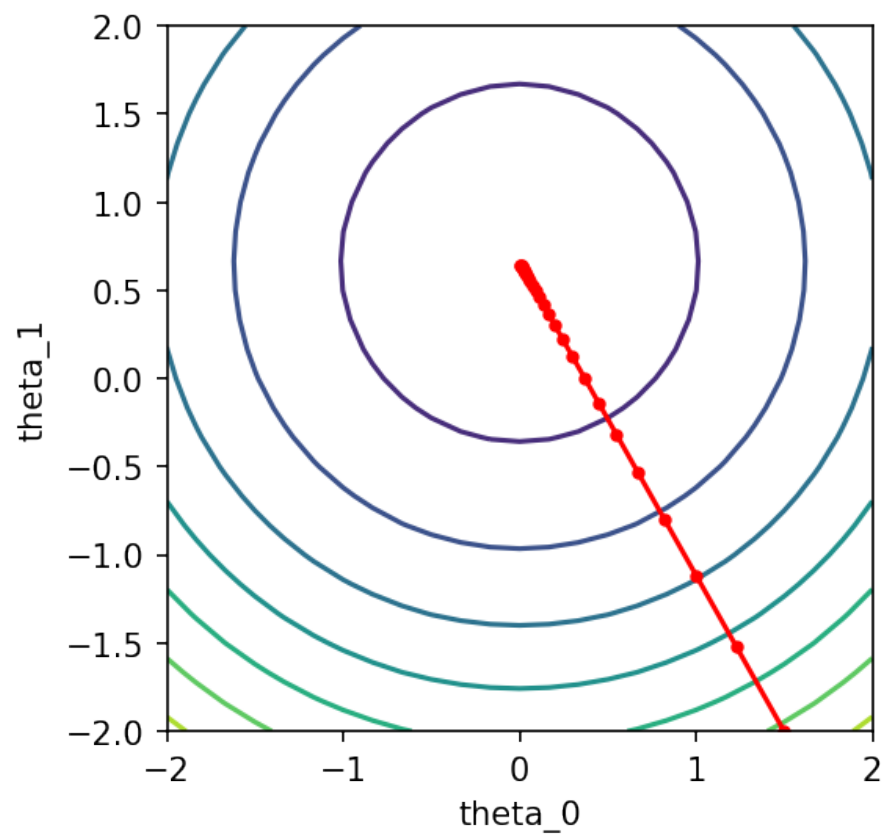(a) The parameters we used were:

- Learning rate $\eta = 0.01$

- Convergence limit $\epsilon = 0.0001$

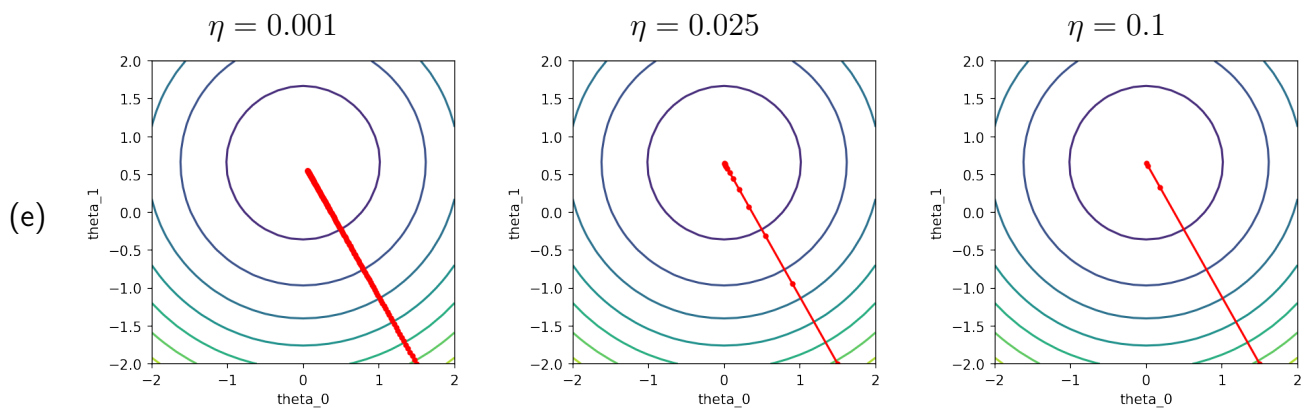- Final set of parameters: $(\theta_0, \theta_1) = (0.00561383, 0.6451277)$

(b)

Plot of normalized density vs acidity

(c)

(d)

(e)

$\eta = 0.001$ $\eta = 0.025$ $\eta = 0.1$

We notice that with a smaller step size, fewer steps are required to reach convergence; this is beneficial in this case, but can also lead to gradient descent overshooting/not converging in some cases.