

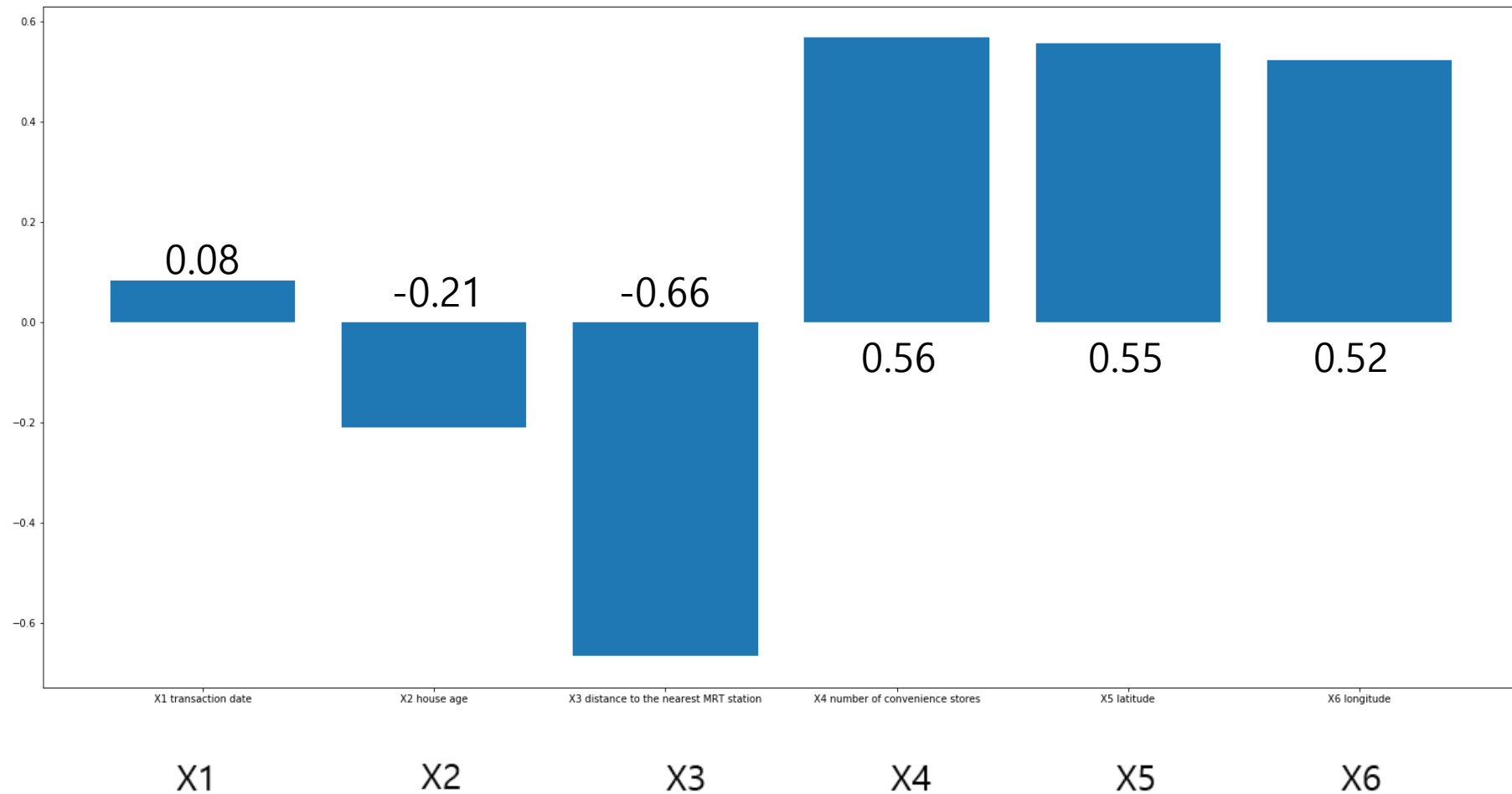
House Price

Prediction

Linear Regression



AI Data corrcoef



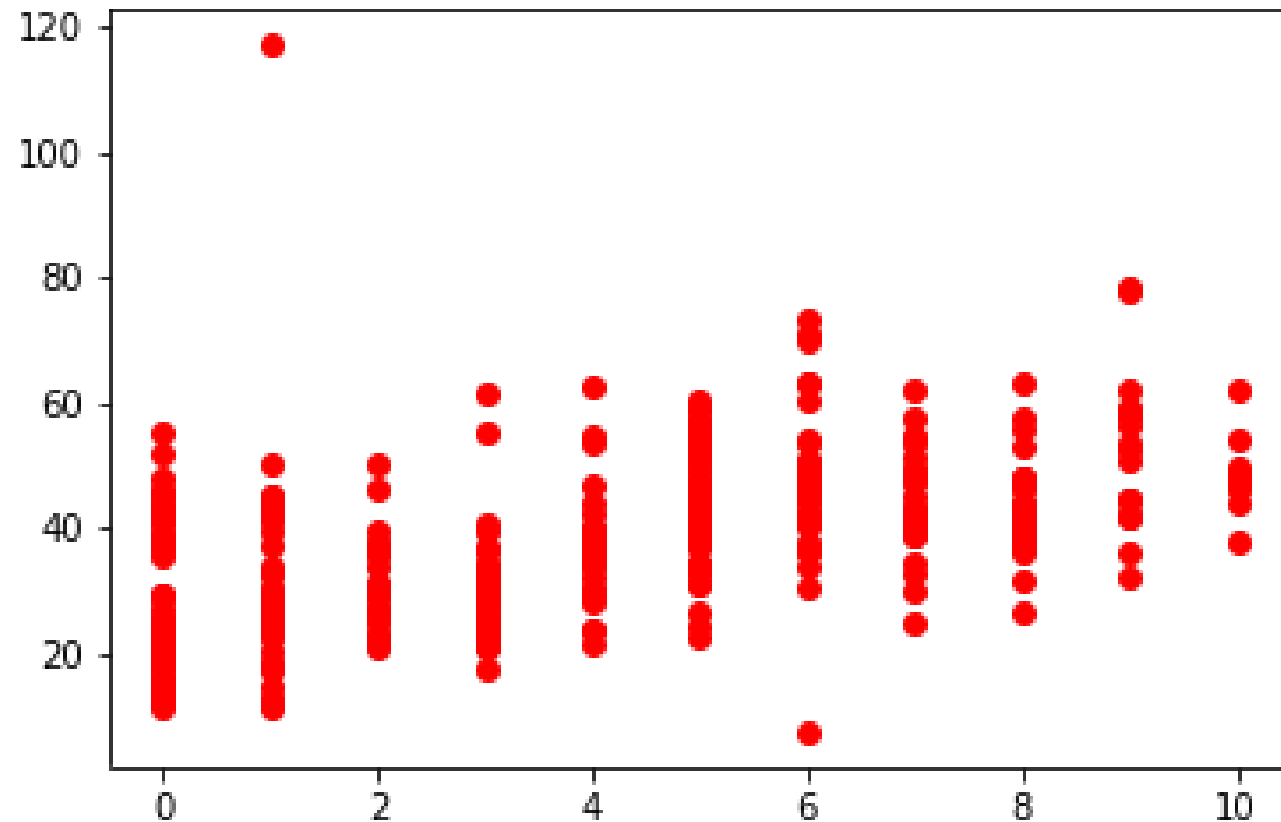
AI Data corrcoef

	X1	X2	X3	X4	X5	X6
X1	1	0.0367701	0.0587889	-0.00528282	0.0435039	-0.0436175
X2	0.0367701	1	0.0260113	0.0344743	0.0518532	-0.0563221
X3	0.0587889	0.0260113	1	-0.599147	-0.576657	-0.814509
X4	-0.00528282	0.0344743	-0.599147	1	0.43662	0.452031
X5	0.0435039	0.0518532	-0.576657	0.43662	1	0.406383
X6	-0.0436175	-0.0563221	-0.814509	0.452031	0.406383	1



Data preprocessing (before)

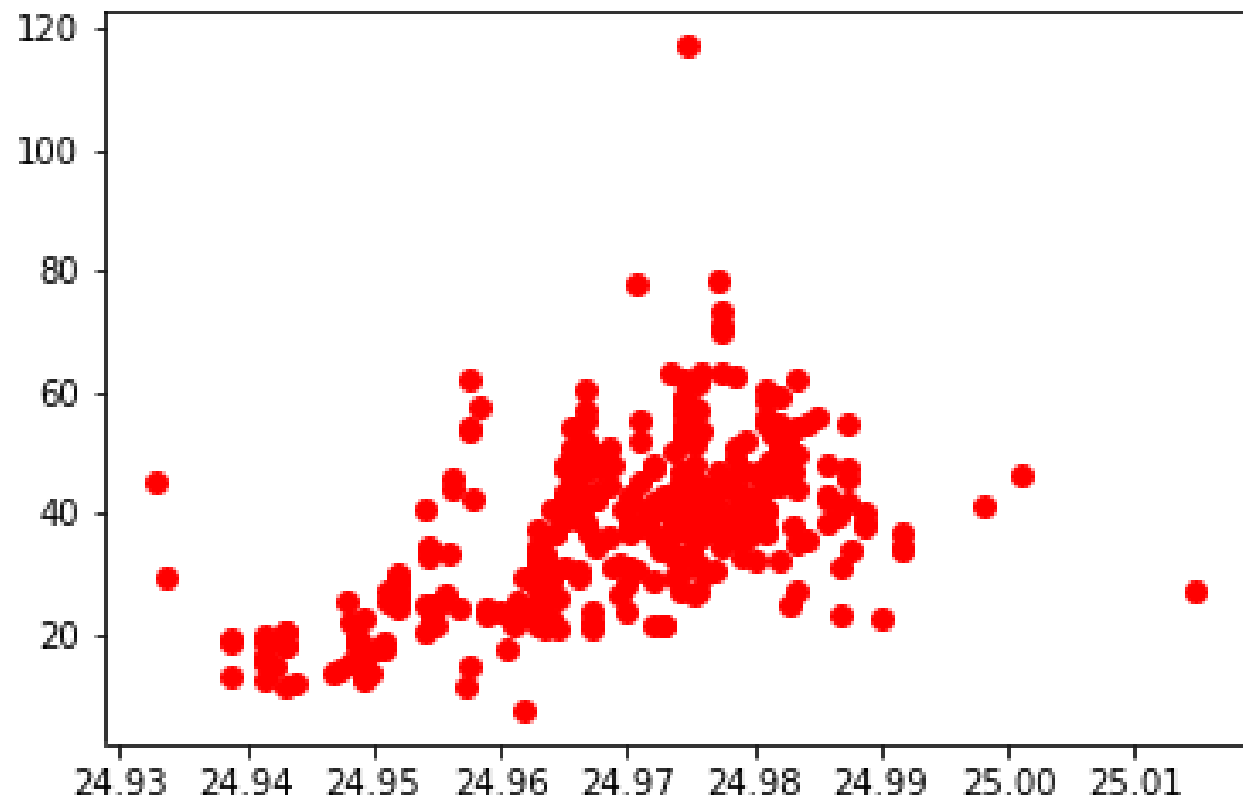
X4 number of
convenience stores





Data preprocessing (before)

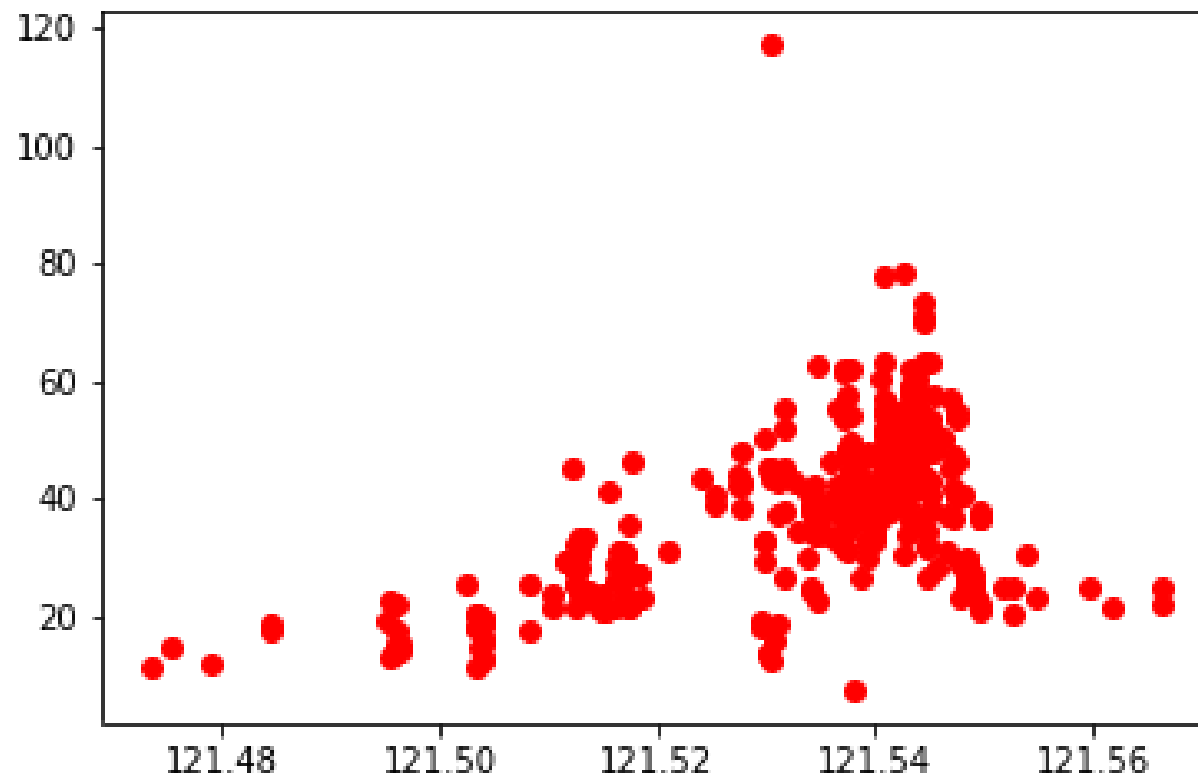
X5 latitude





Data preprocessing (before)

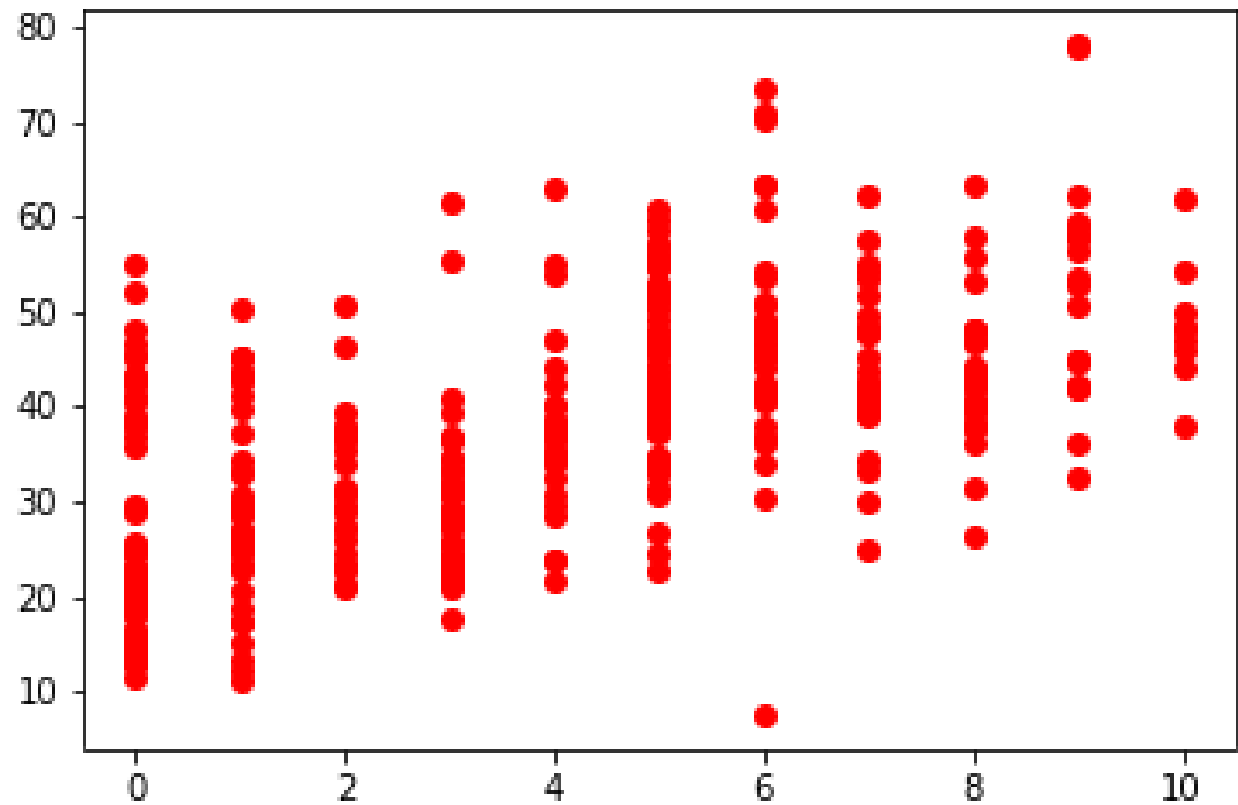
X6 longitude





Data preprocessing (after)

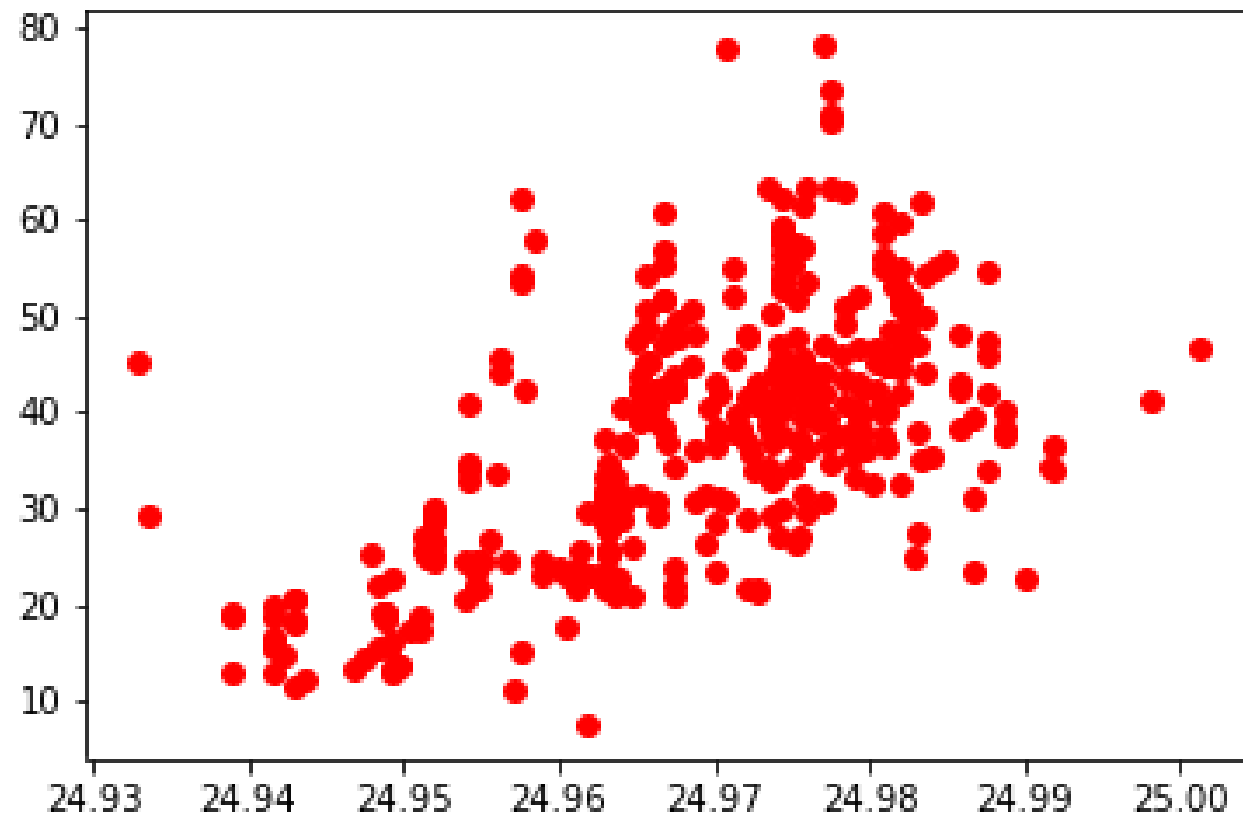
X4 number of
convenience stores





Data preprocessing (after)

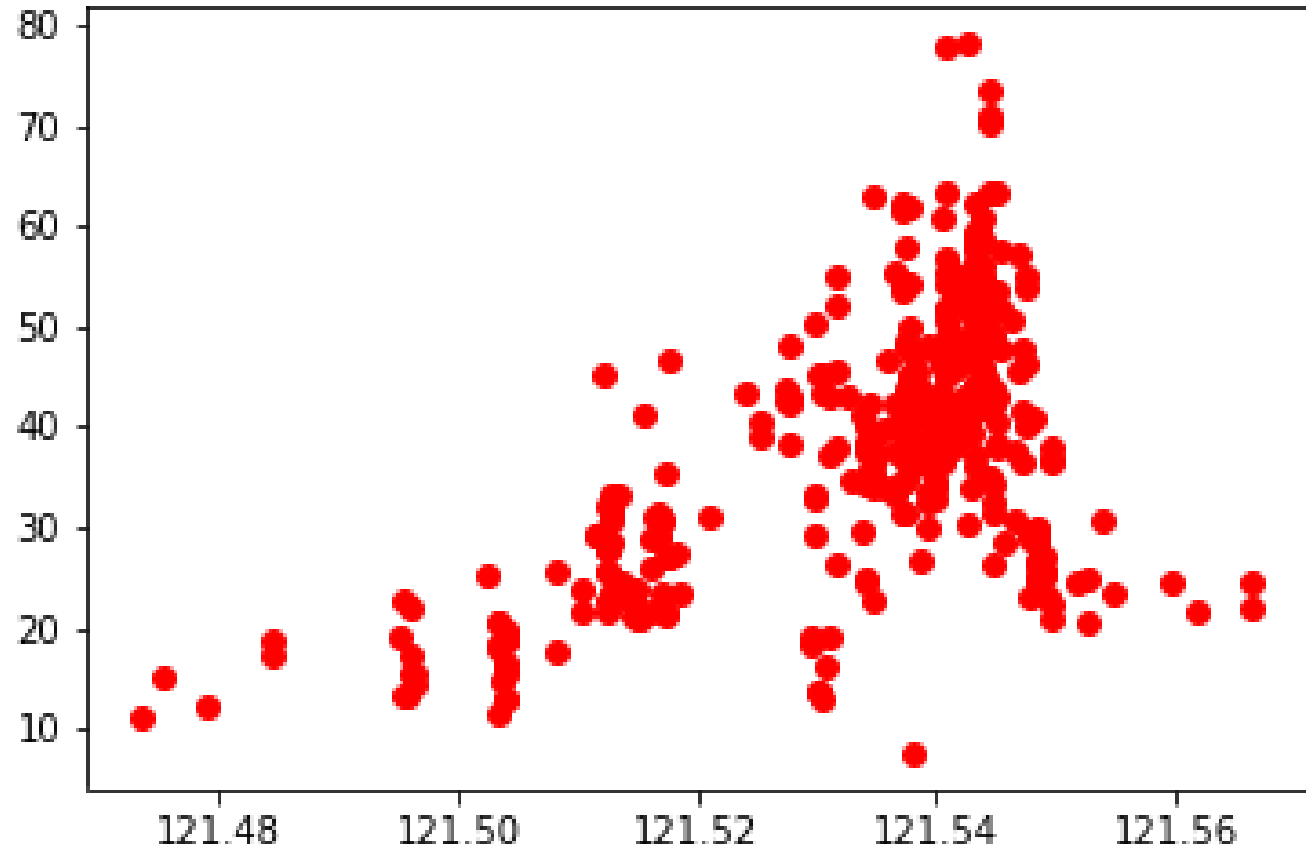
X5 latitude





Data preprocessing (after)

X6 longitude



AI Linear Regression

$$Z_3 = \theta_3 x_3$$

$$Z_2 = \theta_2 x_2$$

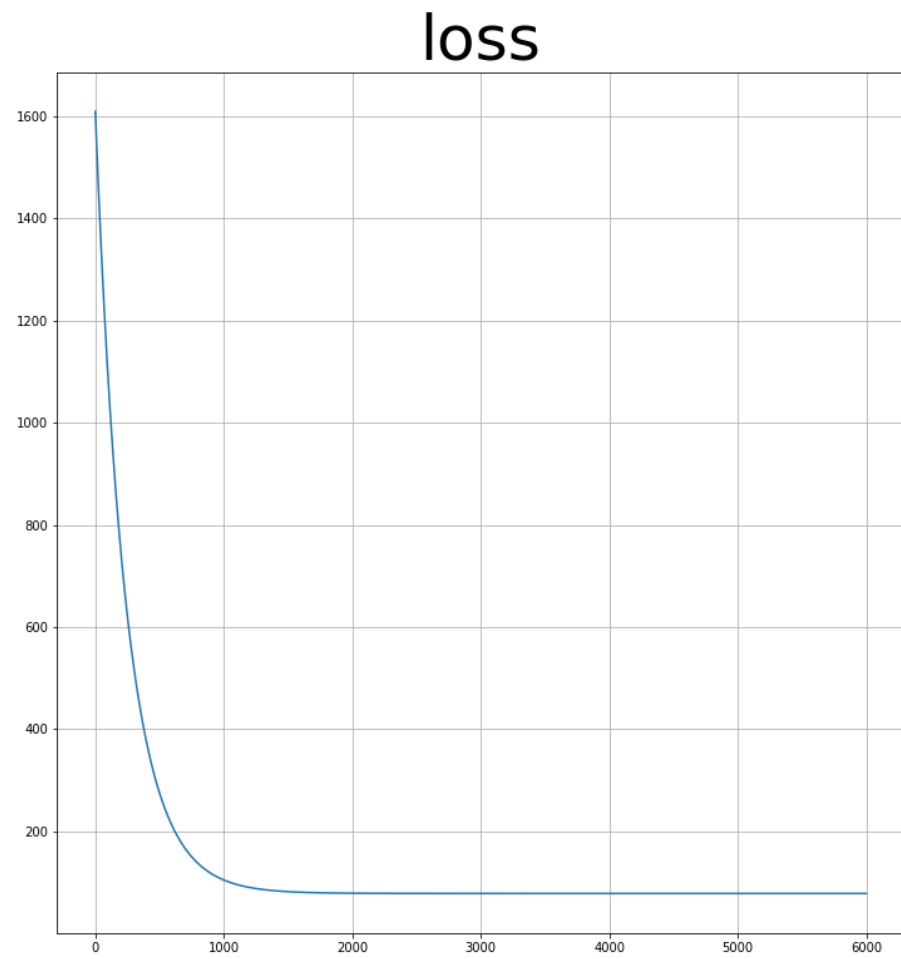
$$Z_1 = \theta_1 x_1$$

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graph LR; Z3["Z3 = theta3 x3"] --> Z4["Z4 = Z3 + Z2 + Z1"]; Z2["Z2 = theta2 x2"] --> Z4; Z1["Z1 = theta1 x1"] --> Z4; Z4 --> Z5["Z5 = Z4 + theta0"]; Z5 --> Z6["Z6 = y + z5"]; Z6 --> L["L = (z6)^2"];
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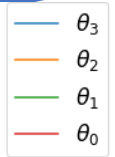
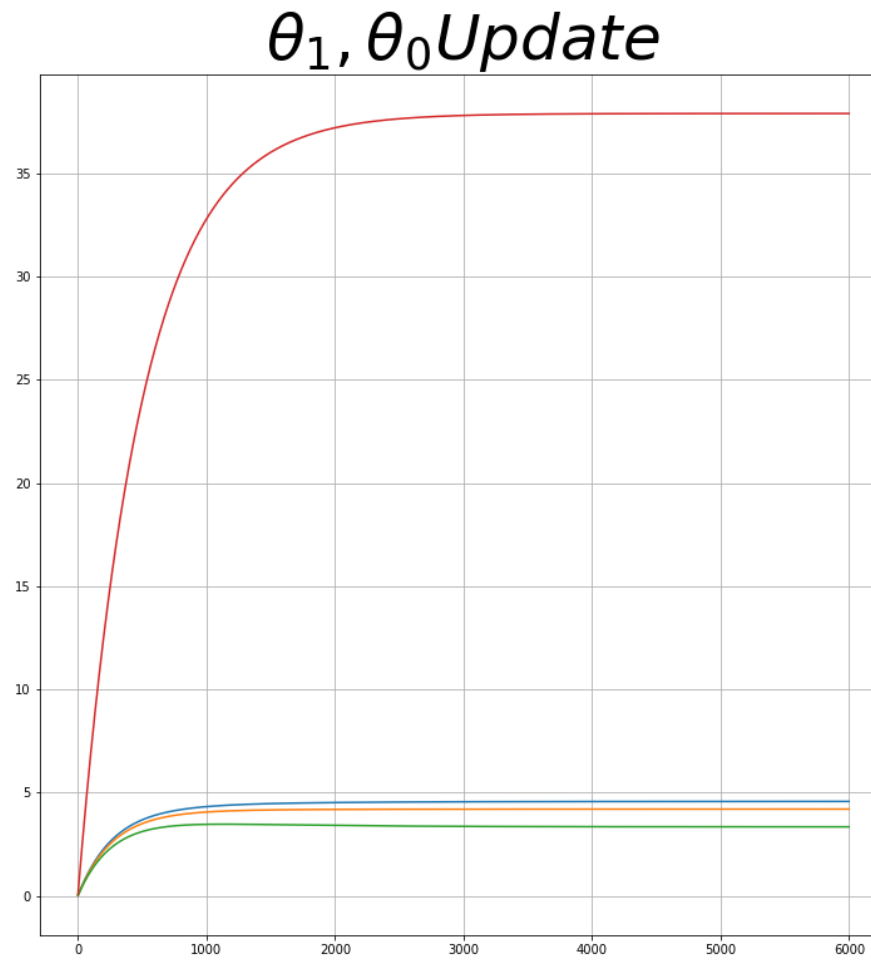
$$Z_5 = z_4 + \theta_0 \longrightarrow Z_6 = y + z_5 \longrightarrow L = (z_6)^2$$

$$(Z_4 = Z_3 + Z_2 + Z_1)$$

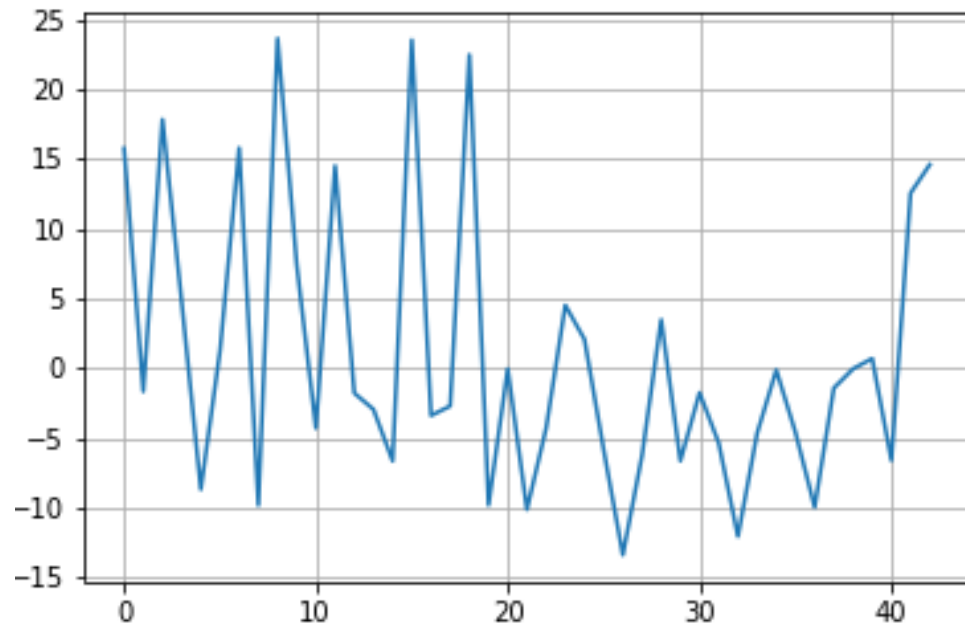
A Train result



Cost : 78.85679088182624



A Test data

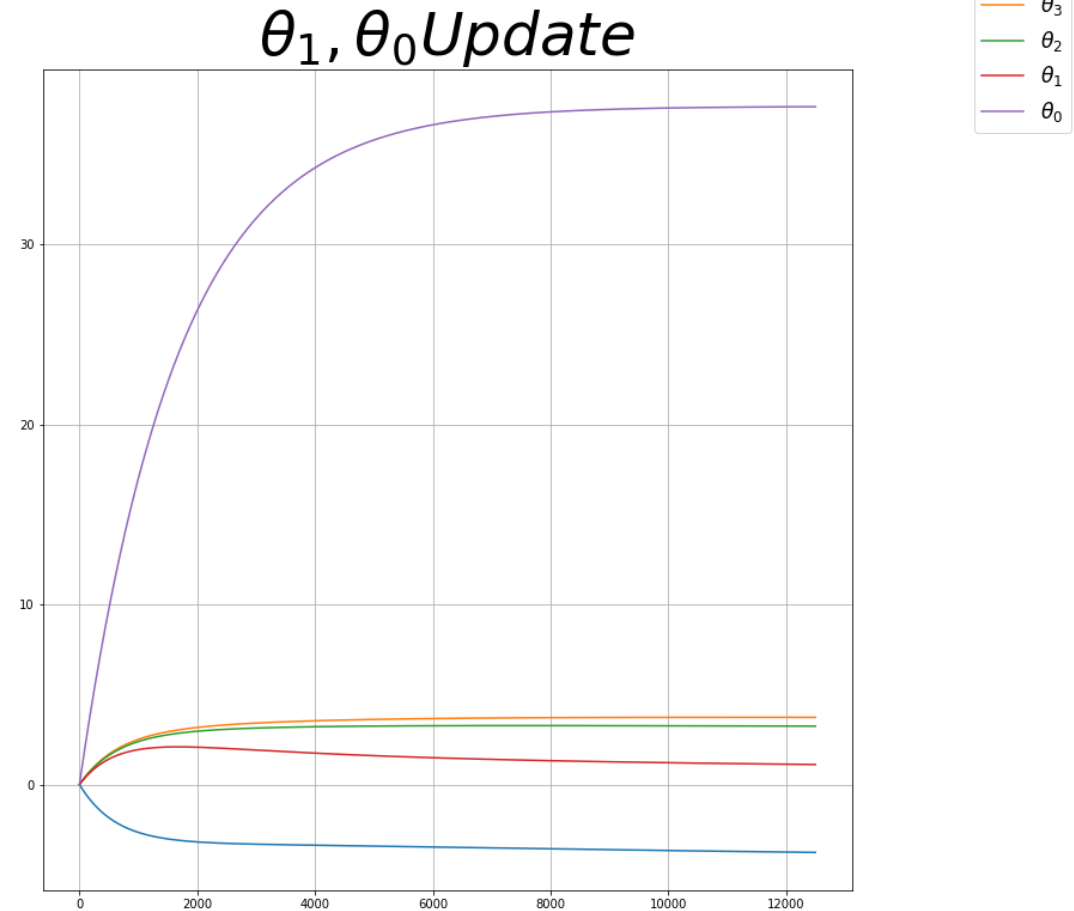
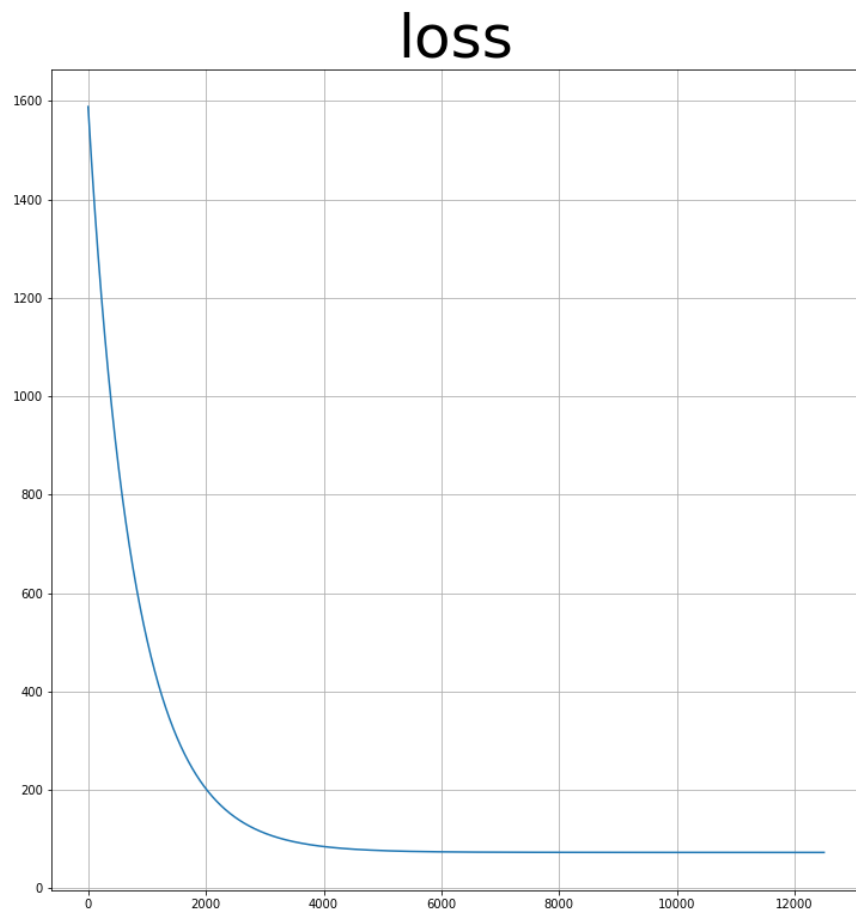


AI Linear Regression

$$\begin{aligned} Z_4 &= \theta_4 x_4 \\ Z_3 &= \theta_3 x_3 \\ Z_2 &= \theta_2 x_2 \\ Z_1 &= \theta_1 x_1 \end{aligned} \quad \begin{array}{l} \nearrow \\ \nearrow \\ \nearrow \\ \nearrow \end{array} Z_5 = Z_4 + Z_3 + Z_2 + Z_1$$
$$Z_6 = z_5 + \theta_0 \longrightarrow Z_7 = y + z_6 \longrightarrow L = (z_7)^2$$

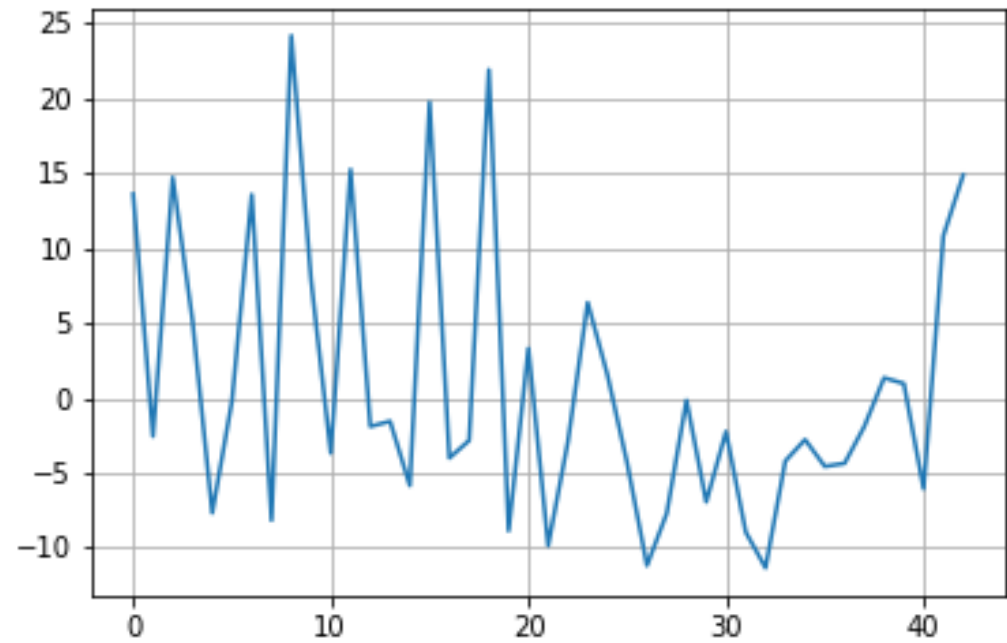
$$(Z_5 = Z_4 + Z_3 + Z_2 + Z_1)$$

AI Train result



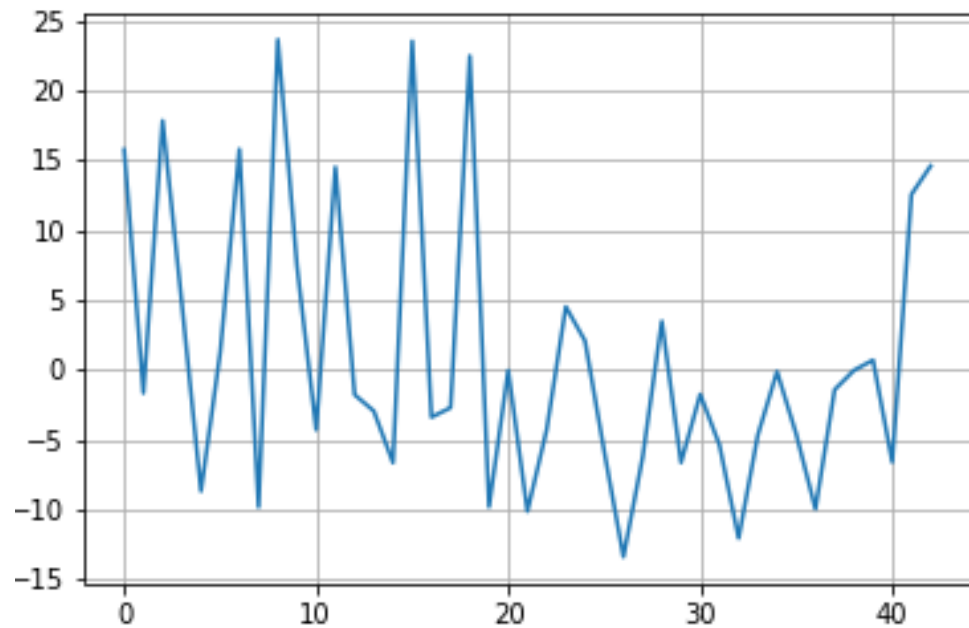
Cost : 72.75241583188847

A Test data

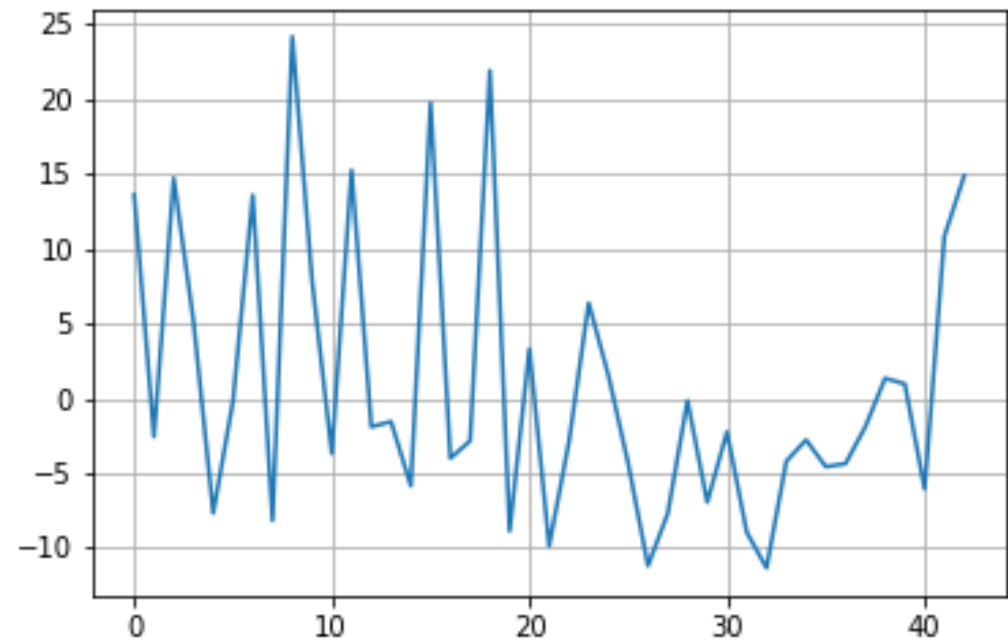




Test data



3 X_data



4 X_data