$q_m = 19$. There are 13 points strictly inside the slab.

The last value of ν is $\nu = 0.97$, see Figure 56.15. We have $p_f = 23, q_f = 24, p_m = 25$ and $q_m = 25$. There are 0 points strictly inside the slab. The slab is so narrow that it does not contain any of the points x_i in it. Running the program with any value $\nu > 0.97$ yields $\epsilon = 0$.

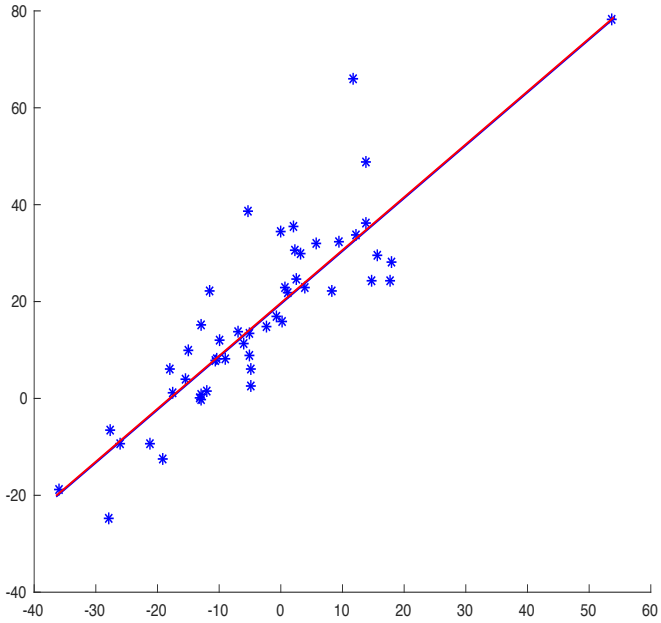

Figure 56.15: Running ν-SV regression on a set of 50 points; $\nu = 0.97$.

56.4 Kernel ν-SV Regression

Since the formulae for w, b, and $f(x)$,

$$w = \sum_{i=1}^{m} (\mu_i - \lambda_i) x_i$$
$$b = \frac{1}{2}\left(y_{i_0} + y_{j_0} - w^\top (x_{i_0} + x_{j_0})\right)$$
$$f(x) = \sum_{i=1}^{m} (\mu_i - \lambda_i) x_i^\top x + b,$$

only involve inner products among the data points x_i and x, and since the objective function $-G(\alpha, \mu)$ of the dual program also only involves inner products among the data points x_i, we can kernelize the ν-SV regression method.