

Machine Learning Exercise 5

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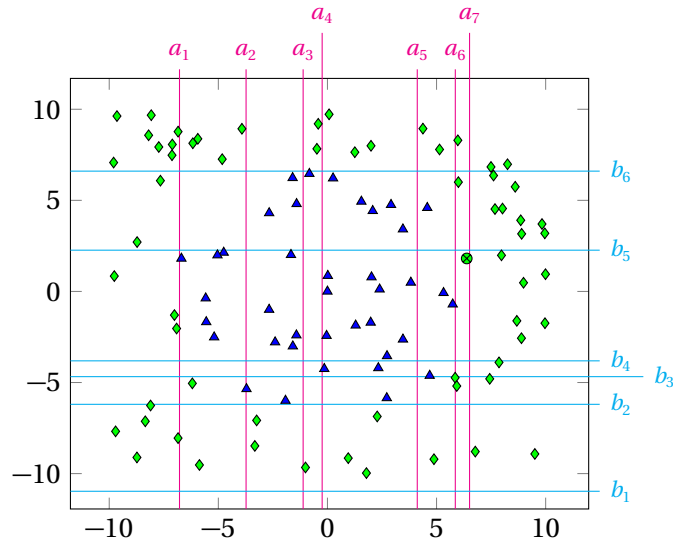


Figure 1: Plot of classified points together with vertical and horizontal weak classifiers. One Point has been misclassified as belonging to the outer class but actually belongs to the center.

$$\begin{aligned}\mathcal{M}(x_0, x_1) = & 6.4646627 \cdot \{x_0 > -6.8761546\} & [a_1] \\ & + 5.9641779 \cdot \{x_0 > -3.8254804\} & [a_2] \\ & + 4.7434951 \cdot \{x_0 < -1.2106168\} & [a_3] \\ & + 3.3219302 \cdot \{x_0 > -0.3389956\} & [a_4] \\ & + 5.8054335 \cdot \{x_0 < 4.0191104\} & [a_5] \\ & + 5.3658443 \cdot \{x_0 < 5.7623528\} & [a_6] \\ & + 5.1708115 \cdot \{x_0 < 6.4160687\} & [a_7] \\ & + 32.4912501 \cdot \{x_1 < -10.97164\} & [b_1] \\ & + 5.1672959 \cdot \{x_1 > -6.1987928\} & [b_2] \\ & + 5.3077303 \cdot \{x_1 > -4.6801596\} & [b_3] \\ & + 3.0394541 \cdot \{x_1 > -3.8123692\} & [b_4] \\ & + 2.7913141 \cdot \{x_1 < 2.2621636\} & [b_5] \\ & + 10.1679675 \cdot \{x_1 < 6.6011156\} & [b_6]\end{aligned}$$