Figure 4.8: Feature Selection Strategies

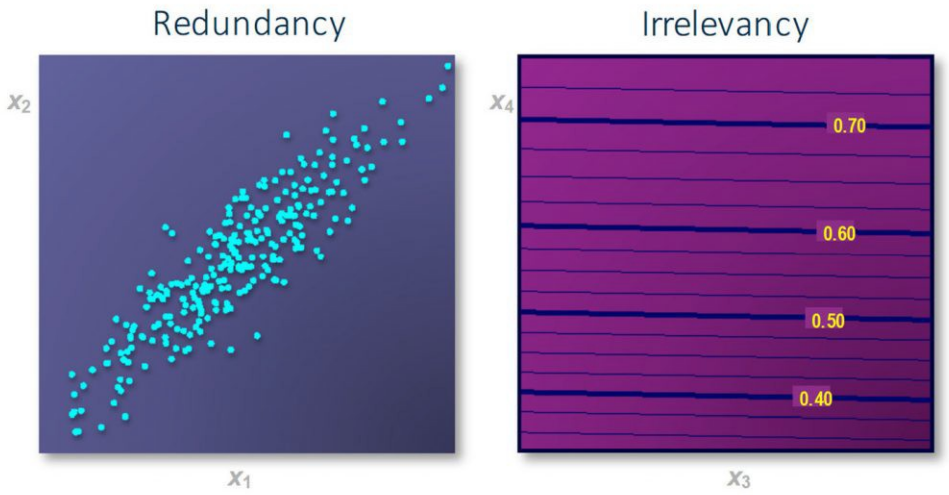


Figure 4.9: Supervised Selection

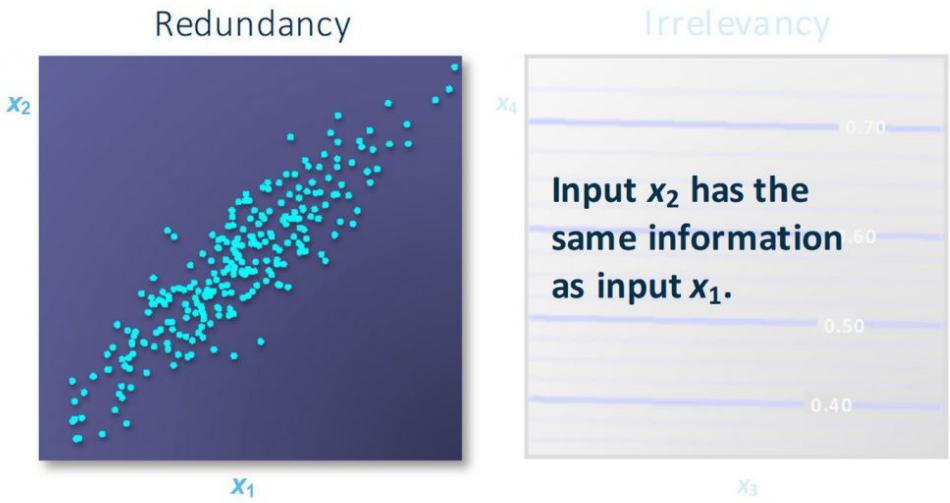


Figure 4.10: Supervised Selection

Example: Target is the response to direct mail solicitation, x_3 is religious affiliation, and x_4 is the response to previous solicitations.

Figure 5.3: Logistic Regression Example

$$\text{logit}(\hat{p}) = -0.81 + 0.92 \cdot x_1 + 1.11 \cdot x_2$$

$$\hat{p} = \frac{1}{1 + e^{-\text{logit}(\hat{p})}}$$

Using the maximum likelihood estimates, the prediction formula assigns a logit score to each x_1 and x_2.

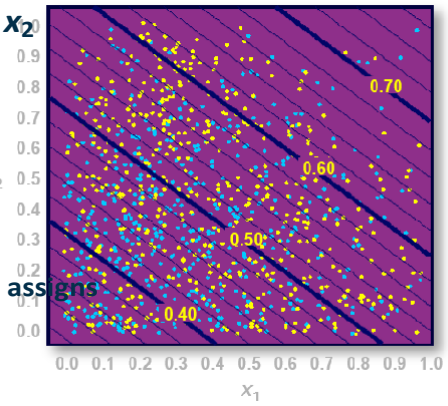
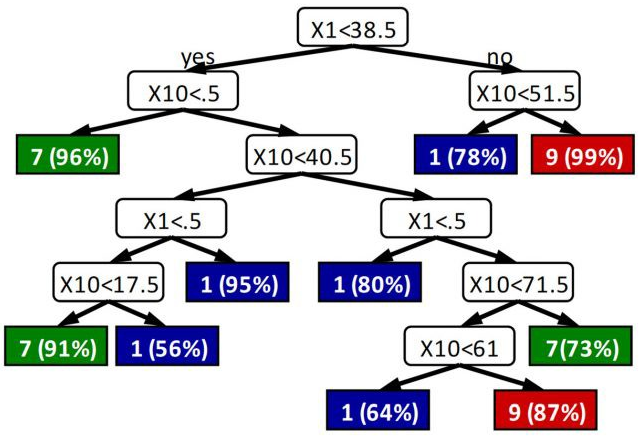


Figure 6.1: Classification Tree



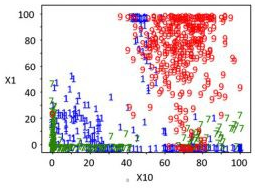


Figure 6.3: Simple Prediction

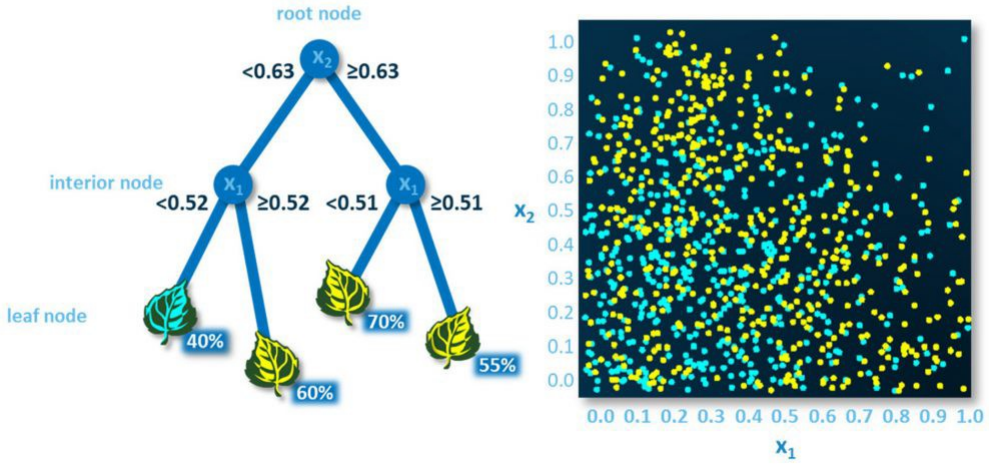


Figure 6.4: Scoring a New Case

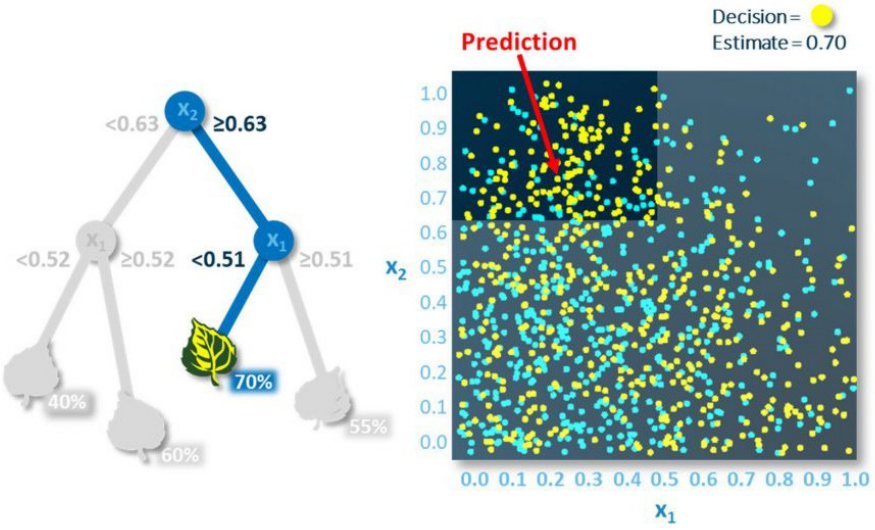


Figure 7.4: Surrogate Splits

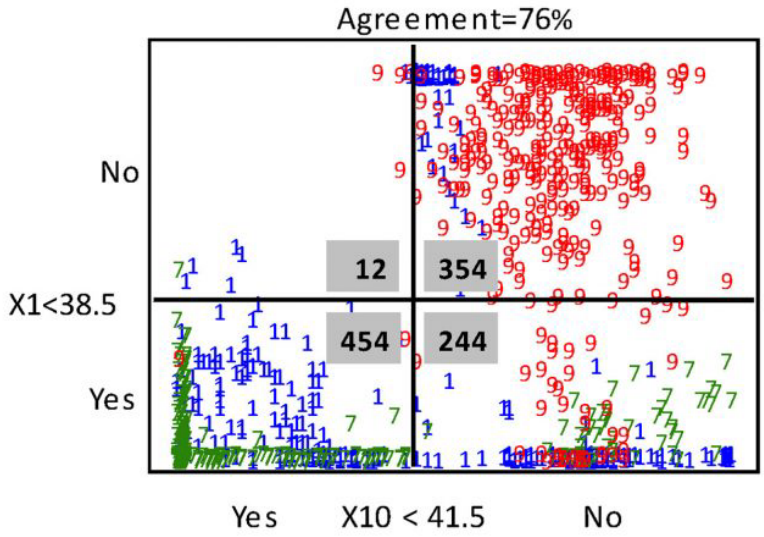


Figure 8.1: Instability

Figure 8.2: Competitor Splits

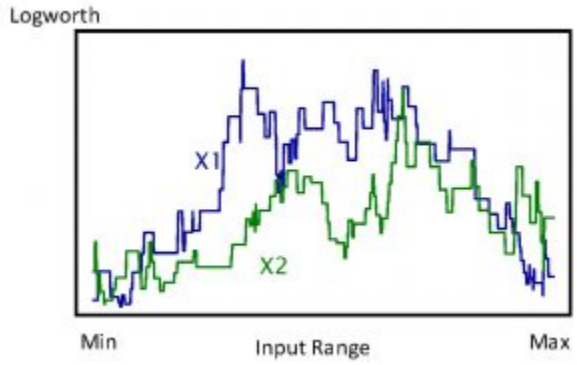


Figure 10.2: Global and Local Minima

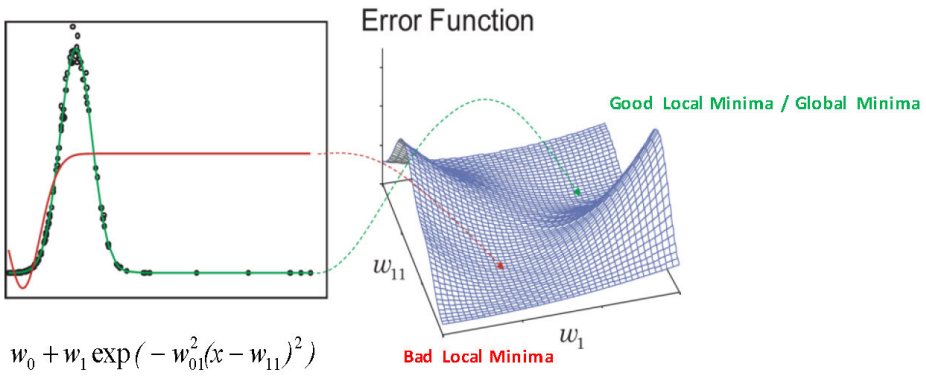


Figure 10.10: Initial values

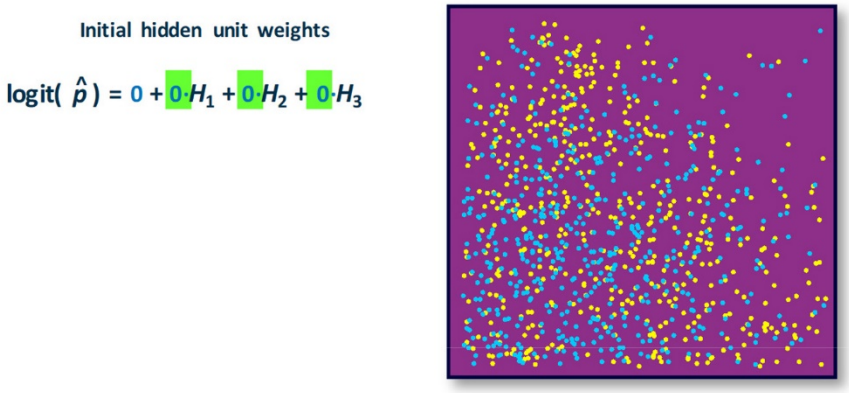


Figure 10.11: Random Initial Input Weights and Biases

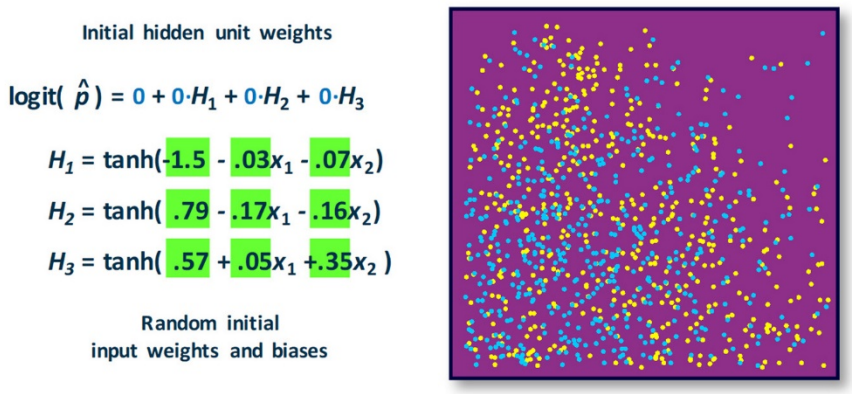


Figure 10.12: Early Stopping – Initial Step Set up to Predict the Overall Average Response

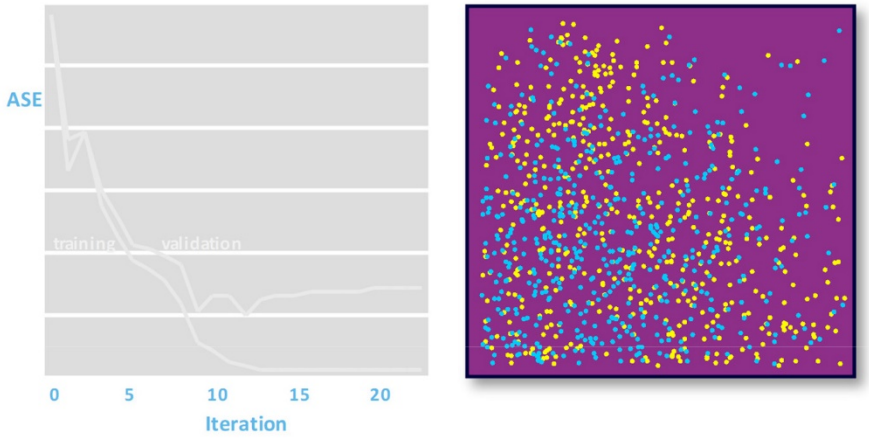


Figure 10.13: Early Stopping – ASE Error for Each Iteration