Adaline

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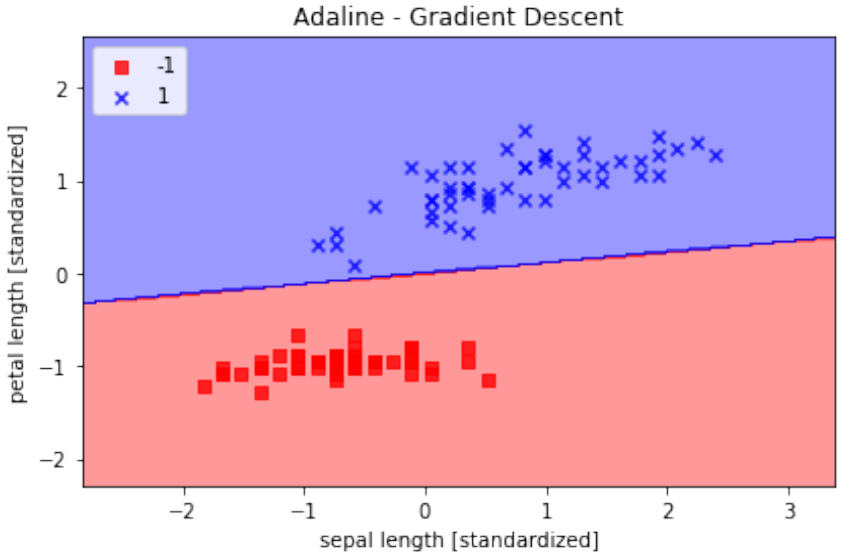
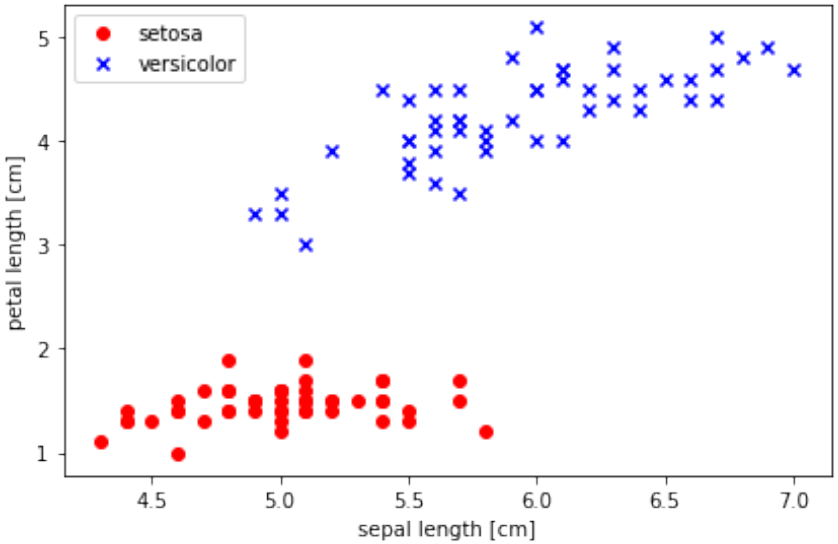
Adaptive Linear Neurons



Adaline Rule

- Linear activation function
- Quantizer for predicting the class



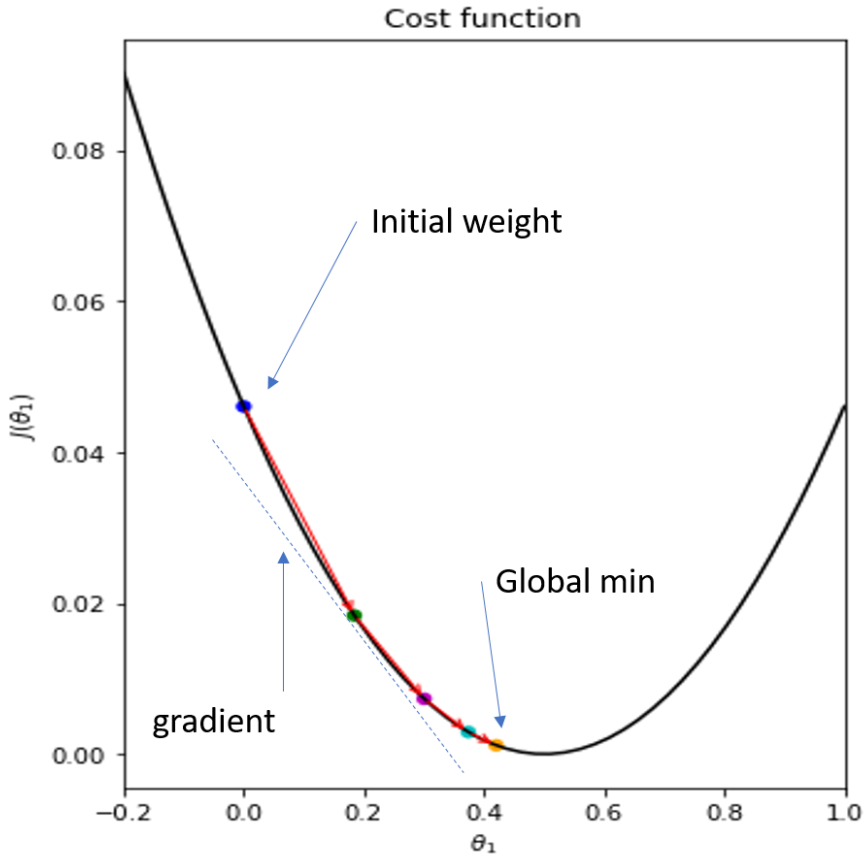
Adaline Rule (cont.)

- $\boldsymbol{w} = \begin{bmatrix} w_1 \\ \vdots \\ w_m \end{bmatrix}, \ \boldsymbol{x} = \begin{bmatrix} x_1 \\ \vdots \\ x_m \end{bmatrix}$
- $\varphi(z) = \boldsymbol{w}^T \boldsymbol{x}$

$$\varphi(\boldsymbol{w}^T \boldsymbol{x}) = \boldsymbol{w}^T \boldsymbol{x}$$

$$\Delta \boldsymbol{w} = -\eta \nabla J(\boldsymbol{w})$$

Gradient Descent



Learning Rate