

RSS and the Gradient in Matrix form

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Recap: The RSS and the Gradient in matrix form

1 The formula for RSS

$$\text{RSS}(\mathbf{w}) = (\mathbf{y} - H\mathbf{w})^\top (\mathbf{y} - H\mathbf{w})$$

2 The formula for the Gradient

$$\nabla \text{RSS}(\mathbf{w}) = -2H^\top (\mathbf{y} - H\mathbf{w})$$