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Single-layer Networks: Regression

Section 1.2

In this chapter we discuss some of the basic ideas behind neural networks using the framework of linear regression, which we encountered briefly in the context of polynomial curve fitting. We will see that a linear regression model corresponds to a simple form of neural network having a single layer of learnable parameters. Although single-layer networks have very limited practical applicability, they have simple analytical properties and provide an excellent framework for introducing many of the core concepts that will lay a foundation for our discussion of deep neural networks in later chapters.