

The classical least squares approach in linear regression is prone to the presence of outliers in the data. The aim of this thesis is to present several robust alternatives to the least squares method in the linear regression framework and discuss their properties. Then robust neural networks based on these estimators are introduced and compared in a simulation study. In particular, the least weighted squares method with adaptive weights seems promising, as it is able to combine high robustness with efficiency in the absence of contamination in the data.