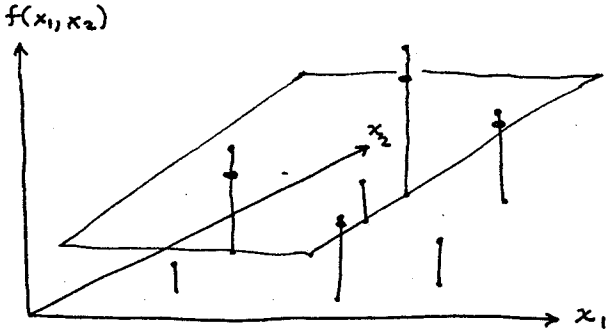
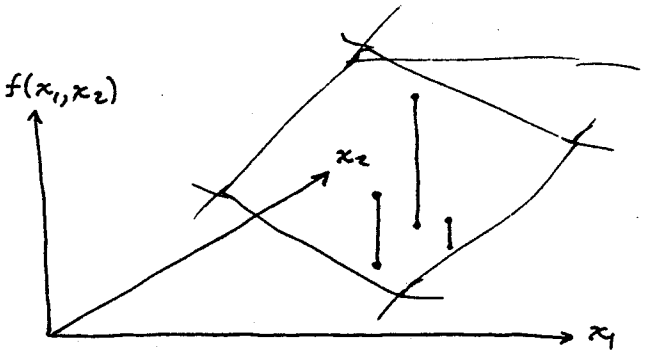


observation: The multiple regression shown here is based on data distributed fairly uniformly across the domain. Consequently, predictions from the multiple regression model have predictable accuracy throughout the domain.

pict:



observation: The multiple regression shown here is based on a small number of data points clustered in one part of the domain. A small change in one data point (such as might arise from measurement noise) could dramatically change the regression model. Thus, the regression model is unreliable away from the cluster of data points.

comment: If the data values are evenly distributed across the domain but vary dramatically for neighboring $\vec{x}$ values, (e.g. with high measurement noise), then the planar regression model gives a high squared error. Thus, we know when this is happening.