Anomaly detection using robust statistics

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Modern data sets are collected at high speed from different sources and often contain some anomalies or outliers. These may be caused by errors, but they could also have been recorded under exceptional circumstances, or belong to another population. Anomalies may spoil the resulting analysis but they may also be the most interesting cases in the data. In either case, the ability to detect such anomalies is essential. A useful tool for this purpose is robust statistics, which aims to detect the outliers by first fitting the majority of the data and then flagging data points that deviate from it. Several robust methods and the resulting graphical outlier detection tools will be presented.