Considering a non-polynomial basis for local kernel regression problem

ABSTRACT

A common used as solution for local kernel nonparametric regression problem is given using polynomial regression. In this study, we demonstrated the estimator and properties using maximum likelihood estimator for a non-polynomial basis such B-spline to replacing the polynomial basis. This estimator allows for flexibility in the selection of a bandwidth and a knot. The best estimator was selected by finding an optimal bandwidth and knot through minimizing the famous generalized validation function.

Keyword: Generalized cross validation; Kernel nonparametric; Maximum likelihood estimator; Non-polynomial; Regression