Summary for Nonparametric Estimation

Linlin Ge

1 Common Methods

1.1 Density Estimation

- kernel estimator

- histogram

- k-nearest neighbor estimator

Kernel Density Estimation[1]

1.2 Regression

- running mean smoother

- kernel smoother

- local polynomial fit, running line smoother

1.3 Classification

$$P = \int_{-\infty}^{t} \frac{1}{nh} \sum_{i=1}^{n} K(\frac{x - x_i}{h}) dx$$

here,

$$K(u) = \begin{cases} \frac{3}{4}(1 - u^2) & |u| \leq 1 \\ 0 & else \end{cases}$$

References

[1] https://blog.csdn.net/weixin_41513917/article/details/102835364