Kernel functions

1. Gaussian kernel

$$K(u) = \frac{1}{\sqrt{2\pi}} \exp\Big(-\frac{1}{2} u^2 \Big)$$

2. Epanechnikov kernel

$$K(u) = \frac{3}{4}(1 - u^2) 1(|u| \leq 1)$$

3. Parzen kernel

$$K(u) = \begin{cases} 1 - 6u^2 + 6|u|^3 & \text{if } |u| \leq 1/2 \\ 2(1 - |u|)^3 & \text{if } 1/2 < |u| \leq 1 \\ 0 & \text{if } |u| > 1 \end{cases}$$

4. Bartlett kernel

$$K(u) = (1 - |u|) 1(|u| \leq 1)$$