- *Normalization using the cumulative distribution function:*

  Given a random variable $x \in \mathbb{R}$ with cumulative distribution function $F_x(x)$, the random variable $\tilde{x}$ resulting from the transformation $\tilde{x} = F_x(x)$ will be uniformly distributed in $[0, 1]$.

- *Rank normalization:*

  Given the sample for a feature as $x_1, \ldots, x_n \in \mathbb{R}$, first we find the order statistics $x^{(1)}, \ldots, x^{(n)}$ and then replace each pattern's feature value by its corresponding normalized rank as

$$\tilde{x}_i = \frac{\underset{x_1,\ldots,x_n}{\text{rank}}\ (x_i) - 1}{n - 1}$$

  where x_i is the feature value for the i'th pattern. This procedure uniformly maps all feature values to the $[0, 1]$ range.