

Continuous Variable Histogram Transformation Tutorial Exercise

The normalized gray level r of an image, is a continuous variable ($0 \leq r \leq 1$). The probability density function of r is given by:

$$p_r(r) = \begin{cases} -2r + 2, & \text{when } 0 \leq r \leq 1 \\ 0, & \text{otherwise.} \end{cases}$$

- Find the transformation $T(r)$ which converts the random variable r to uniform.
- Prove that the pdf of the resulting variable is uniform.