Interpolazione bilineare

$$f(x,y) = a_0 + a_1 x + a_2 y + a_3 xy$$

coefficienti

$$f(0,0) = a_0 = f(Q_{11})$$

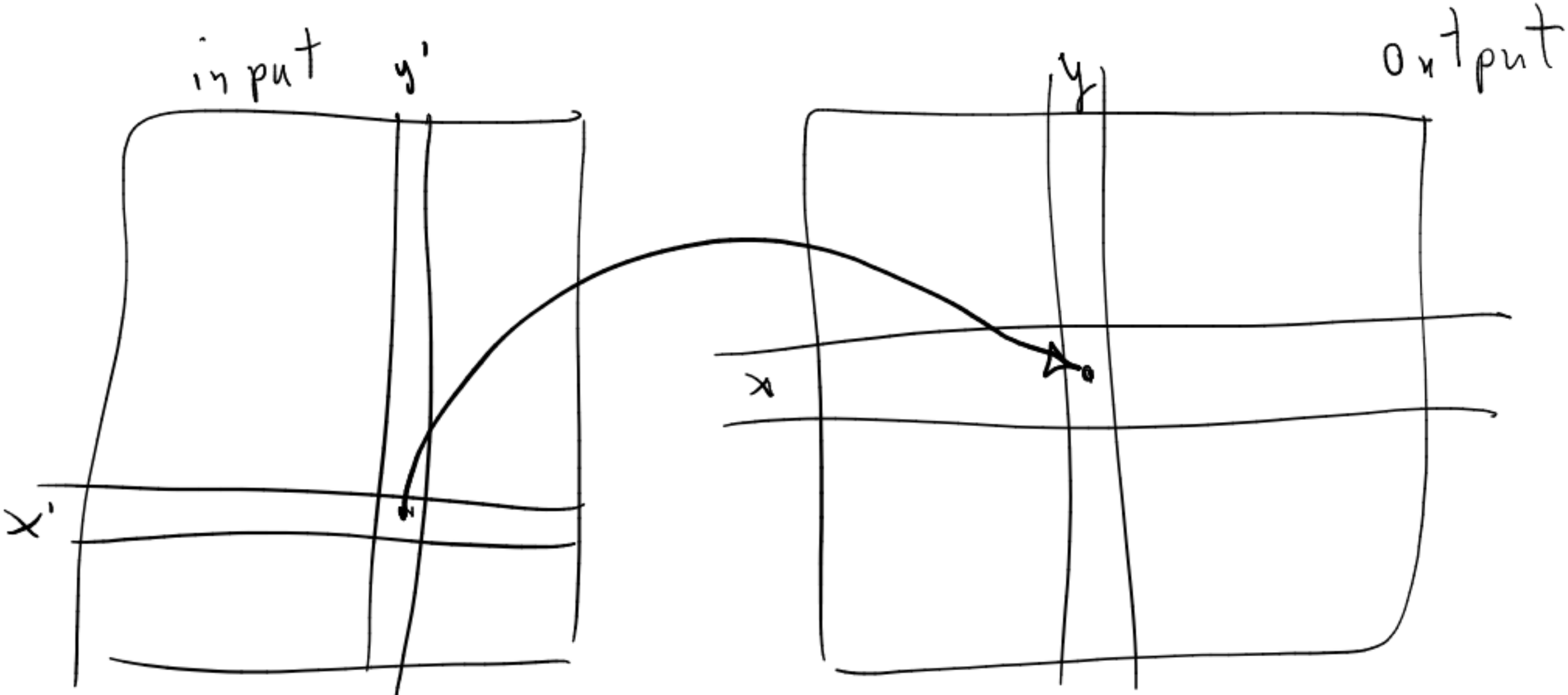
$$f(1,0) = a_0 + a_1 = f(Q_{12}) \quad - \quad - \quad -$$

Interpolazione Bicubica

$$f(x,y) = \sum_{i=0}^{3} \sum_{j=0}^{3} a_{ij} x^i y^i$$

$$f(x,y) = a_{00} + a_{01} y + a_{10} x + a_{11} x y + a_{20} x^2 + a_{02} y^2 \dots$$

$$a_{33} x^3 y^3$$



$$\begin{bmatrix} x' \\ y' \end{bmatrix} = T \begin{bmatrix} x \\ y \end{bmatrix} + o$$

$$c = \bar{T}\, c + O$$

$$(c - Tc)T^{-1} = O\,T^{-1}$$

offset

$$s = T(r)$$

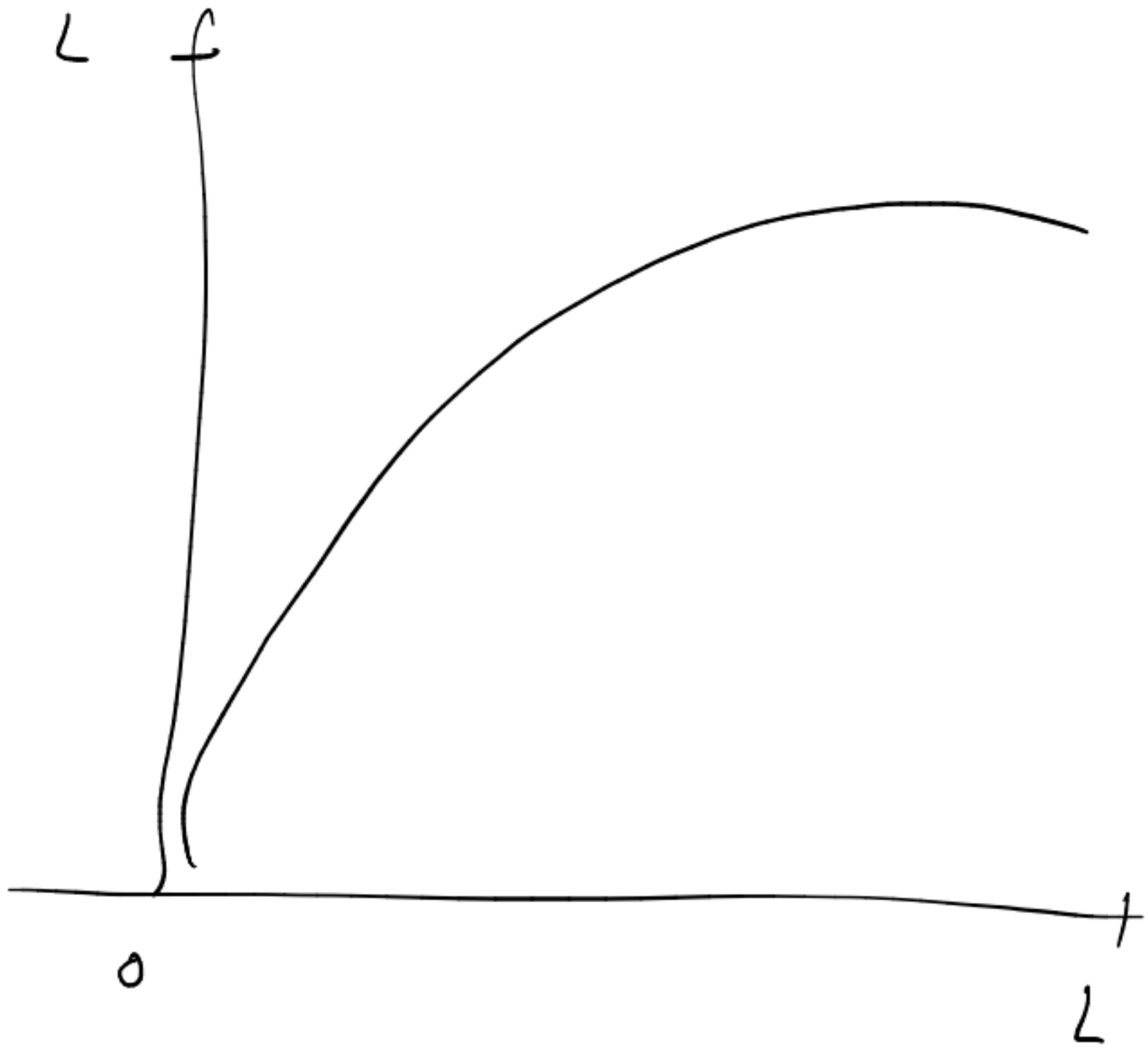
$$T(r) = r + c$$

$$\llcorner\ r \cdot c$$

$$T(r) = \alpha r^{\gamma} + \beta$$

Istogramma Cumulativo:

$$h(r_k) = \frac{\sum_{i \leq k} n_i}{\sum_{i} n_i}$$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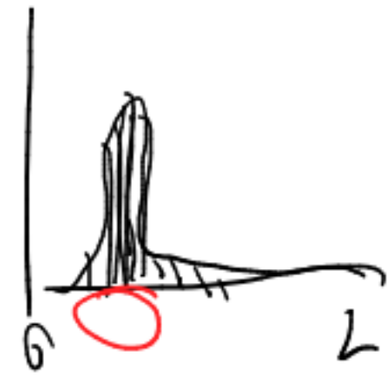
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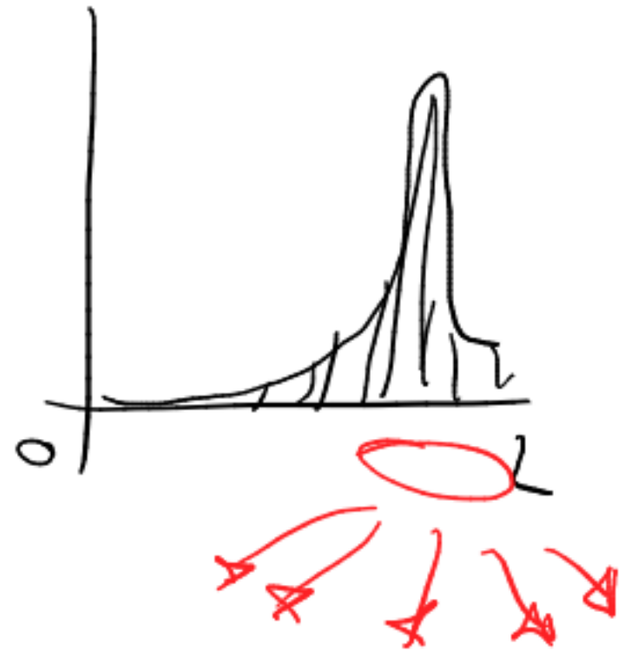
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$$s = T(r)$$

monotona

$$r \rightarrow p_r(r)$$

$$s \rightarrow p_s(s)$$

$$p_s(s) = p_r(r) \cdot \left| \frac{dr}{ds} \right|$$

$$s = T(r) = \int_0^r p_r(w)\, dw$$

→ distribuzione cumulativa su r

$$\frac{dS}{dr} = \frac{d}{dr}\overline{T}(r) = \frac{d}{dr}\int_0^r p_r(w)\,dw = p_r(r)$$

$$p_s(s) = p_r(r)\left|\frac{dr}{ds}\right| = p_r(r)\left|\frac{ds}{dr}\right|^{-1} = p_r(r)\cdot\left|p_r(r)\right|^{-1} = 1$$

uniforme

$[0, L-1]$

$$S = T(r) = (L-1)\int_0^r p_r(w)\,dw$$

$$\Downarrow\Downarrow$$

$$p_s(s) = \frac{1}{L-1}$$