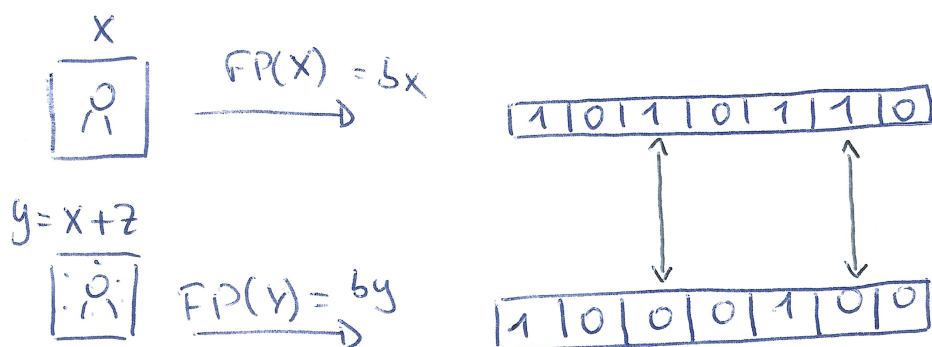


Goal :  $\min \|x - \hat{x}\|_2^2$



$$P_b = \frac{1}{L} \sum_{i=1}^L \underbrace{\Pr[b_{x_i} \neq b_{y_i}]}_{\substack{1 \text{ if different} \\ 0 \text{ if same}}}$$

$$\tilde{x}_i = w_i^t x = w_{i1}^t x_1 + w_{i2}^t x_2 + \dots + w_{in}^t x_n$$

if  $N \rightarrow \infty \Rightarrow P(\tilde{x}_i) \approx$

$$E[H^d(b_x, b_y)] = L \cdot P_b$$

$$\text{Var}(H^d(b_x, b_y)) = L \cdot P_b \cdot (1 - P_b)$$

