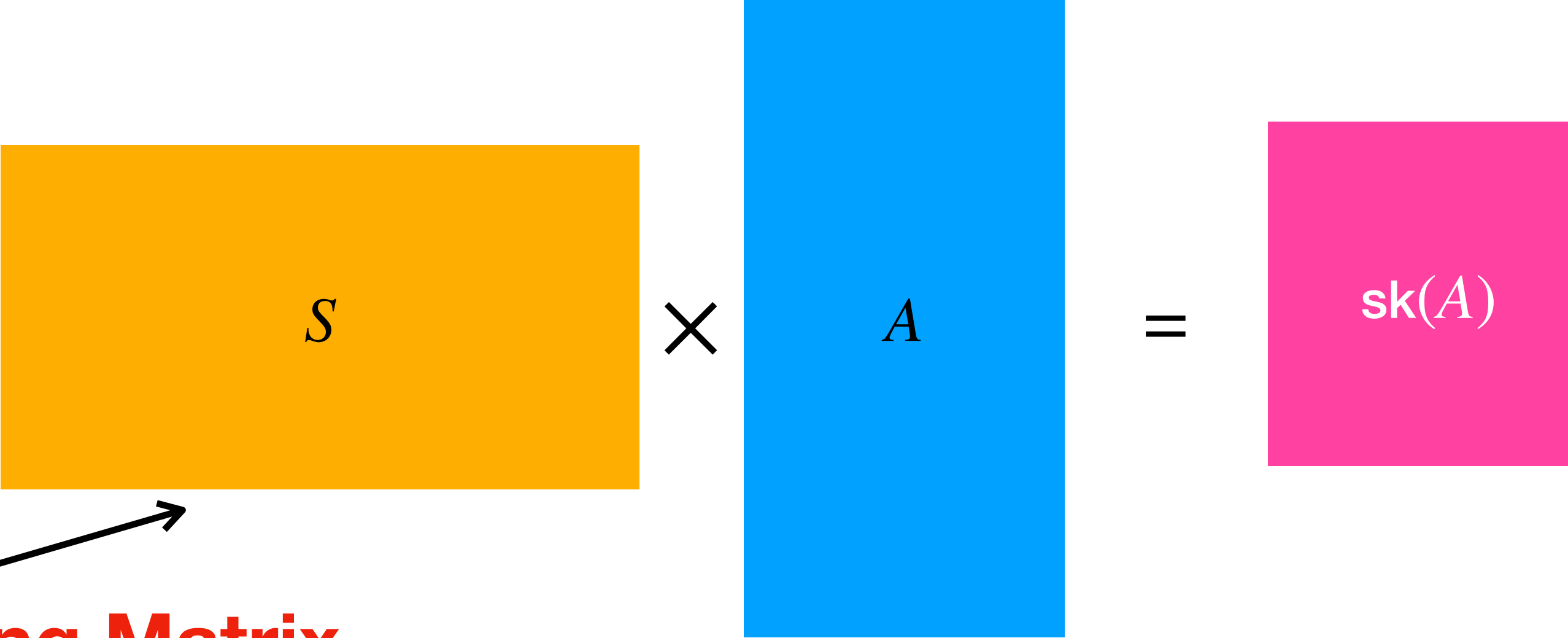


# Linear Sketching

- Apply a randomized linear transform
  - CountSketch [Clarkson, Woodruff '13], OSNAP [Nelson, Nguyen '13], SRHT [Tropp '10], ...


$$\begin{array}{c} \text{Sketching Matrix} \nearrow \\ S \end{array} \times A = \text{sk}(A)$$

- A good sketching matrix  $S$  consolidates information into the “sketch”

# Coresets

- A weighted subset of points
- A good solution for the subset  $\Rightarrow$  A good solution for the overall dataset
- Usually are randomized and constructed via importance sampling
  - Sensitivity Sampling [Feldman, Langberg '12]
  - Lewis Weight Sampling [Cohen, Peng '15]