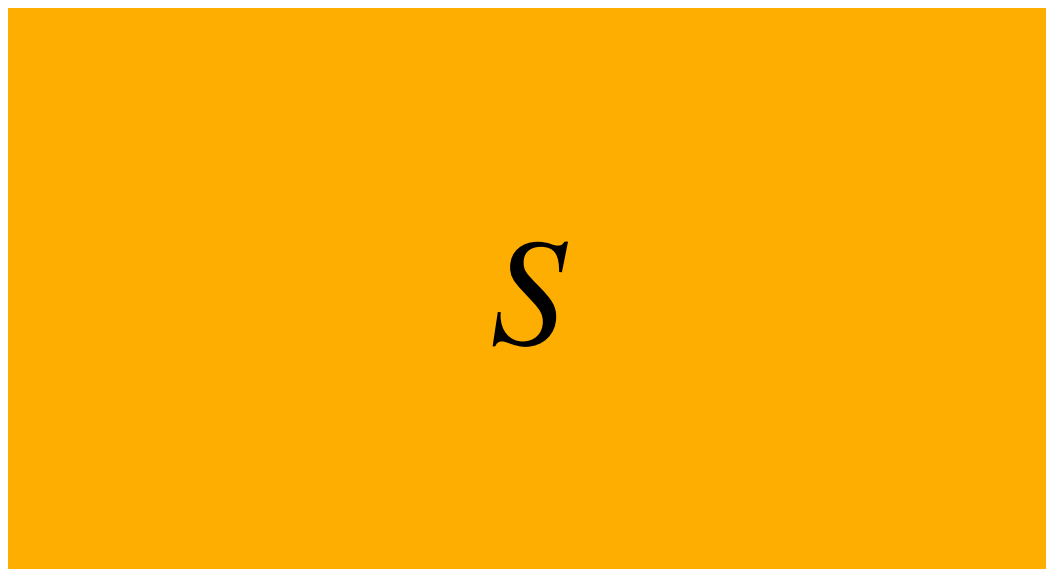


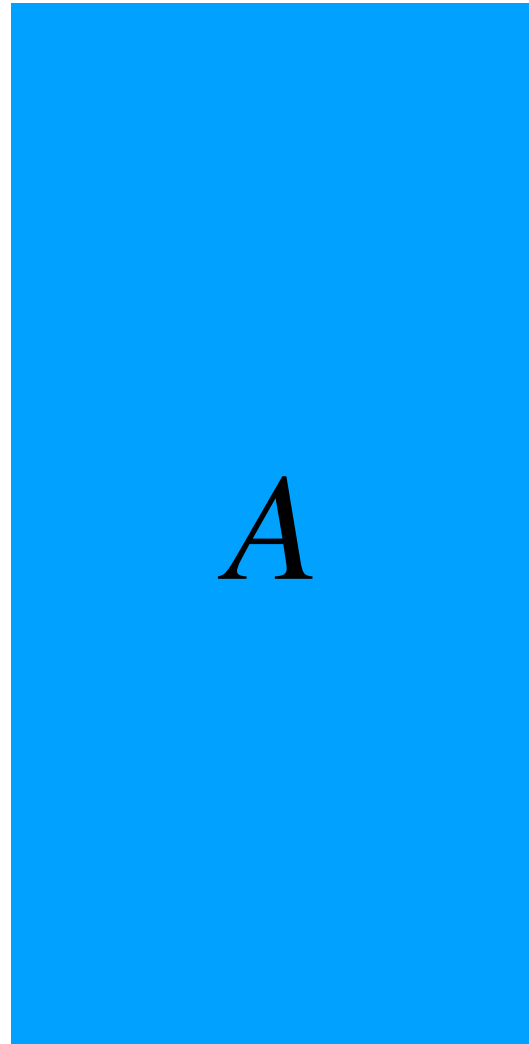
A Major Technique: Linear Sketching

• Apply randomized linear transform

- CountSketch [Clarkson and Woodruff '13], OSNAP [Nelson and Nguyen '13], SRHT [Tropp '10, Ailon and Chazelle '06], ...



\times



$=$



Sketching Matrix

- S consolidates information into the “sketch”



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

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How is Sketching Useful?

Distributed Setting

