

Deterministic Algorithm

• Stack $S_1^{(1)}, \dots, S_t^{(1)}$ to get a matrix $Q^{(1)}$

$$r^{(1)} = \frac{\alpha}{\sqrt{n}} \begin{array}{|c|} \hline Q^{(1)} \\ \hline \end{array} \begin{array}{|c|} \hline u \otimes v \\ \hline \end{array} + \begin{array}{|c|} \hline Q^{(1)} \\ \hline \end{array} \begin{array}{|c|} \hline \text{vec}(G) \\ \hline \end{array}$$

- Based on $r^{(1)}$ pick $Q^{(2)}[r^{(1)}]$

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- Stack $S_1^{(1)}, \dots, S_t^{(1)}$ to get a matrix $Q^{(1)}$

$$r^{(1)} = \frac{\alpha}{\sqrt{n}} \begin{matrix} \text{blue box} & Q^{(1)} \end{matrix} \begin{matrix} \text{red box} & u \otimes v \end{matrix} + \begin{matrix} \text{blue box} & Q^{(1)} \end{matrix} \begin{matrix} \text{red box} & \text{vec}(G) \end{matrix}$$

- Based on $r^{(1)}$ pick $Q^{(2)}[r^{(1)}]$

Bayes Risk Lower Bounds