

Next Steps: Streaming

• Approximate singular vectors in the row arrival model

• smaller space since a weaker model

- [Price '23] shows that if $\sigma_1(A)/\sigma_2(A) \leq O(1)$, then need $\Omega(d^2)$ space to approximate top singular vector

- Price also shows that if $\sigma_1(A)/\sigma_2(A) \geq C\sqrt{\log n \cdot \log d}$, then can approximate top singular vector in $O(d)$ space

• Can we relax the gap assumption?

- Can we assume random order or some benign conditions on A to obtain better algorithms?

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Query lower bounds for LRA

with David Woodruff [NeurIPS '23]