

How is Sketching Useful?

classicsetting

- Compute a sketch of the data quickly

Runtime-intensive algorithms on much smaller instances and on the full dataset

Distributed Setting

Compute a sketch of the local dataset and send it to the coordinator

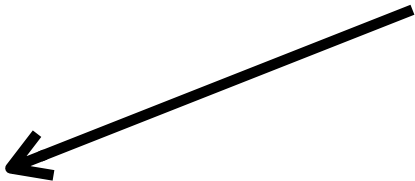
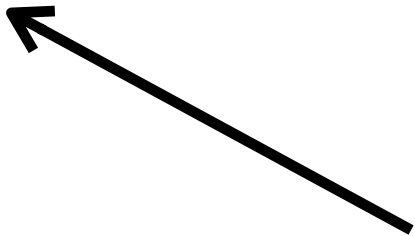
• Smaller the sketch, lower the error which is required

Streaming Setting

- If the sketch construction is efficiently **updateable**, modify the sketch on each update to the underlying dataset



This Talk



How is Sketching Useful?

- **Classic Setting**

- Compute a sketch of the data quickly
- Run time-intensive algorithms on much smaller sketch instead of on the full dataset

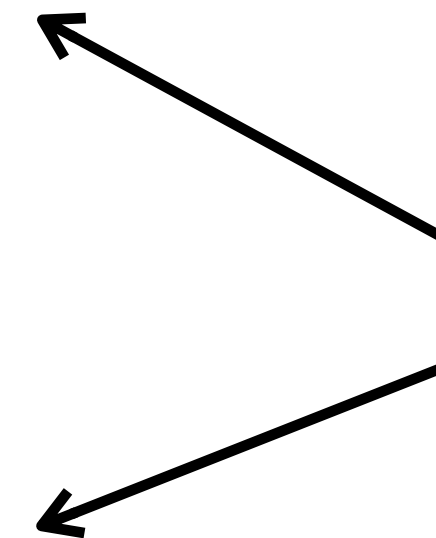
- **Distributed Setting**

- Compute a sketch of the local dataset and send it to the coordinator
- Smaller the sketch, lower the communication required

- **Streaming Setting**

- If the sketch construction is efficiently **updateable**, modify the sketch on each update to the underlying dataset

This Talk



Distributed Setting

