

Our Results

• **Theorem:** For $0 < p < 2$, can approximate $F_p(x)$ up to $1 \pm \varepsilon$ using $\varepsilon^{-2} \log d$ bits of space and $O(\log d)$ update time

- Valid only for $\varepsilon < 1/d^c$

- Improves on $O(\log^2 d \log \log d)$ update time of [KNPW'11]

- Many other results for CountSketch, $\|x\|_\infty$ estimation etc.

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Main Ideas