# Previous Work

#### **Algorithms:**

## ullet Cormode, Muthukrishnan and Yi '11 : $ilde{O}(n^{1-2/p} \cdot \operatorname{poly}(s/arepsilon))$ bits

• Woodruff and Zhang '12 :  $\tilde{O}(s^{p-1}/\varepsilon^{\Theta(p)} \cdot \operatorname{poly}(\log n))$ 

## • Kannan, Vempala and Woodruff '14 : $\tilde{O}(s^p/arepsilon^2 \cdot \operatorname{poly}(\log n))$

## • For general functions $O(s^2 \cdot c_{f,s} / \varepsilon^2 \cdot \operatorname{poly}(\log n))$

#### **Lower Bounds:**

• Woodruff and Zhang '12 :  $\Omega(s^{p-1}/arepsilon^2)$  (s-BTX problem)

## ullet Kannan, Vempala and Woodruff '14 : $\Omega(c_{f,s}/arepsilon)$ (s-Player Promise Set-Disjointness)

### Distributed functional monitoring

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# The Parameter $C_{f,S}$