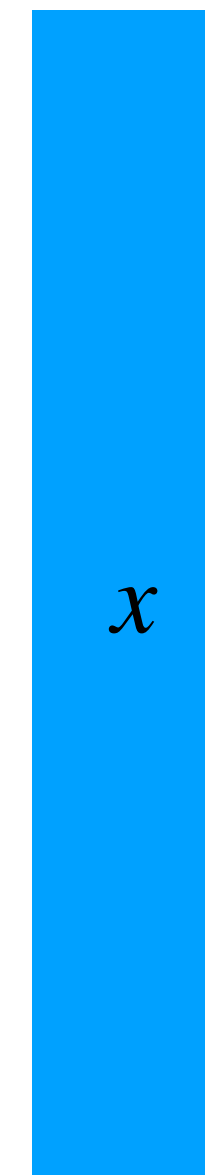# Turnstile Streaming

- Initialize $x \leftarrow 0 \in \mathbb{R}^n$

- On update (i, Δ) :

  - Set $x_i \leftarrow x_i + \Delta$

- Answer queries about x using **small space**

  - $\max_i |x_i|$

  - $\sum_i |x_i|^p$ (F_p moments)

x Updates: (i_1, Δ_1) (i_2, Δ_2) $\ldots$ (i_m, Δ_m)

Our Results