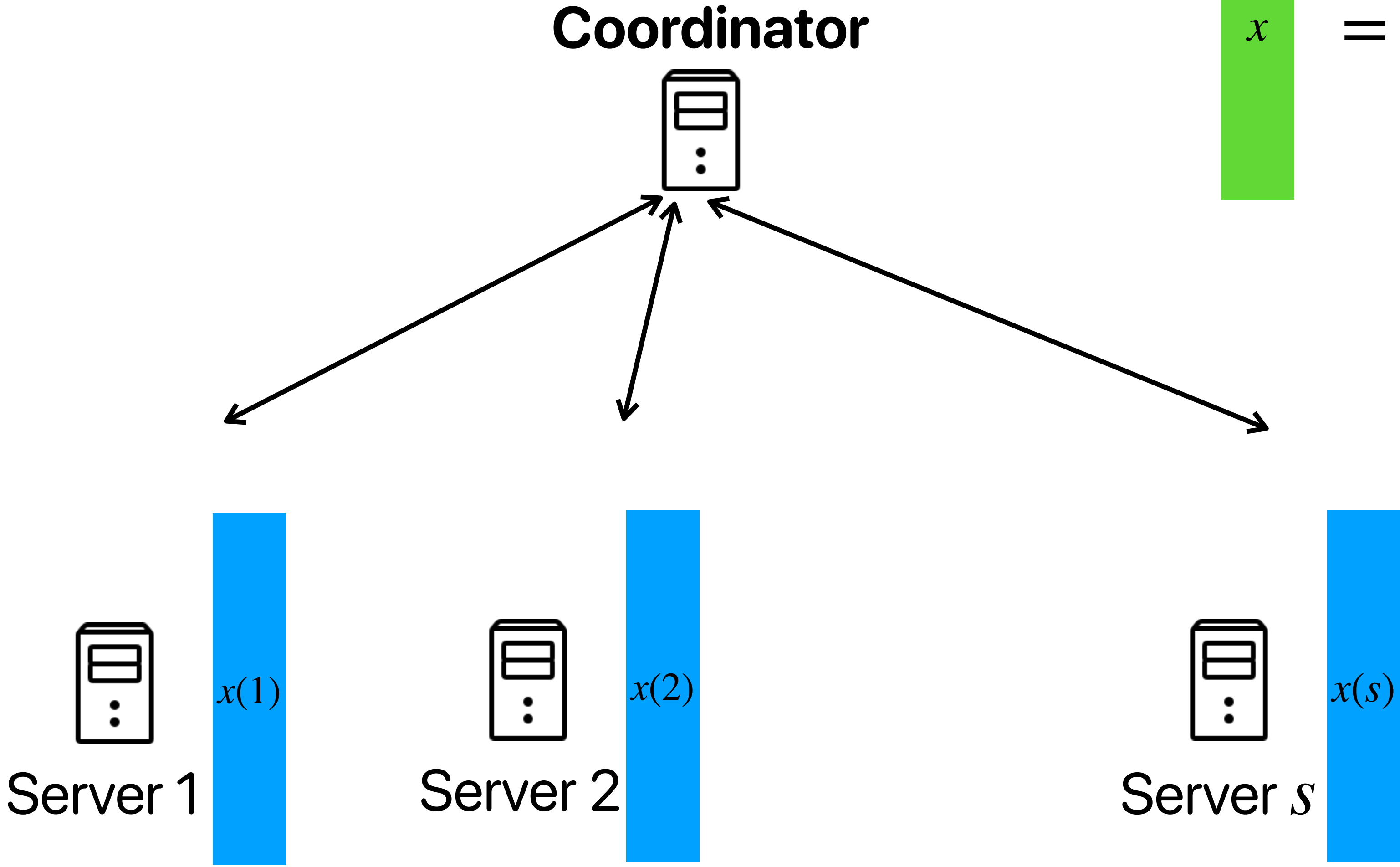# Optimal Communication Bounds for Classic Functions in the Coordinator Model and Beyond

with Hossein Esfandiari, Vahab Mirrokni, David Woodruff and Peilin Zhong [STOC'24]

Moment Estimation

Coordinator

$$x = x(1) + x(2) + \cdots + x(s)$$

Estimate $\sum_i x_i^p$

More generally, $\sum_i f(x_i)$

≥ 0

Server 1 $\quad$ $x(1)$

Server 2 $\quad$ $x(2)$

Server s $\quad$ $x(s)$