Wyner-Ziv Estimators: Efficient Distributed Mean Estimation with Side Information

AISTATS 2021

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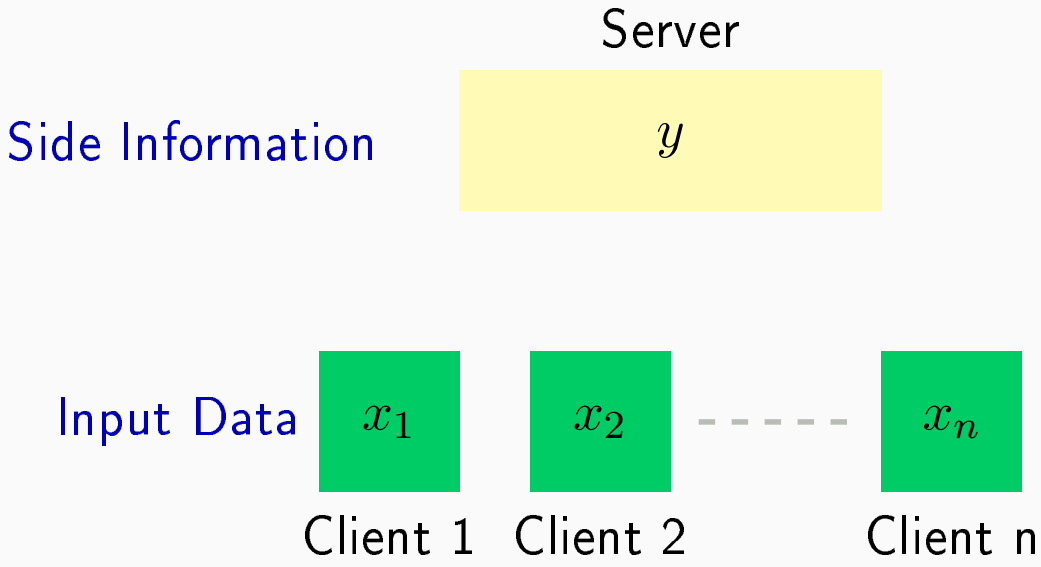
The Setup



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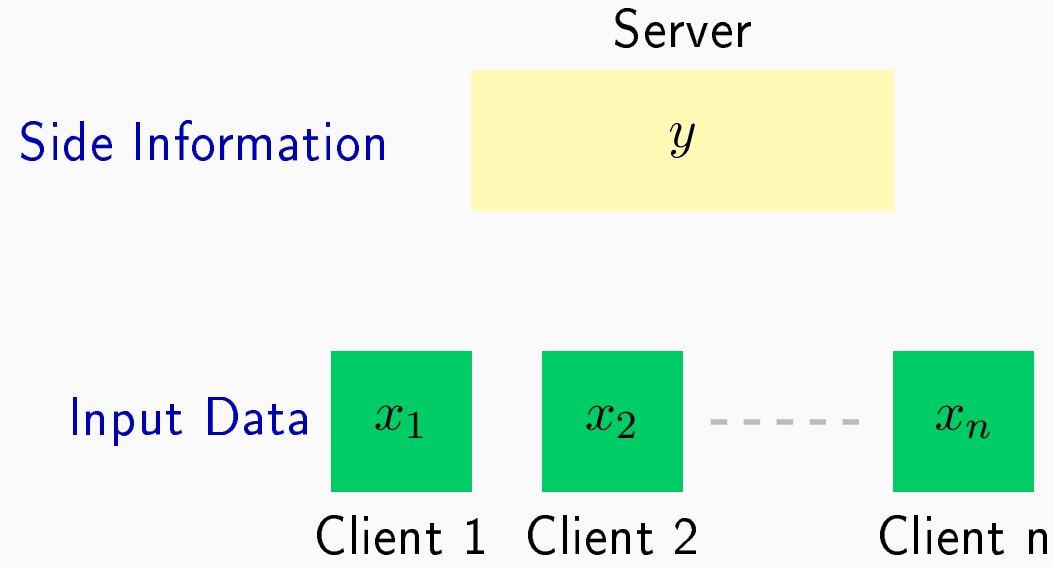

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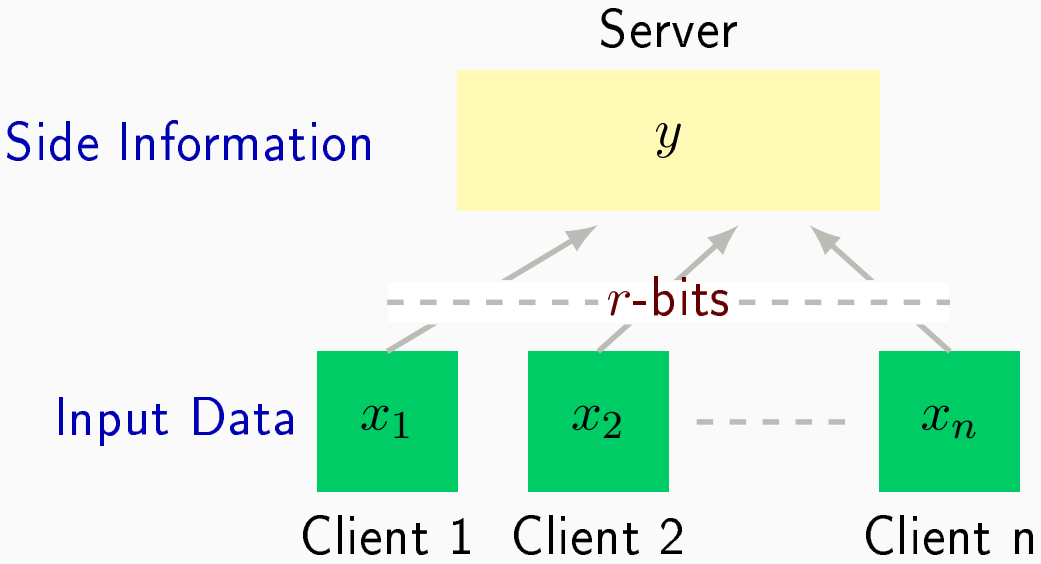

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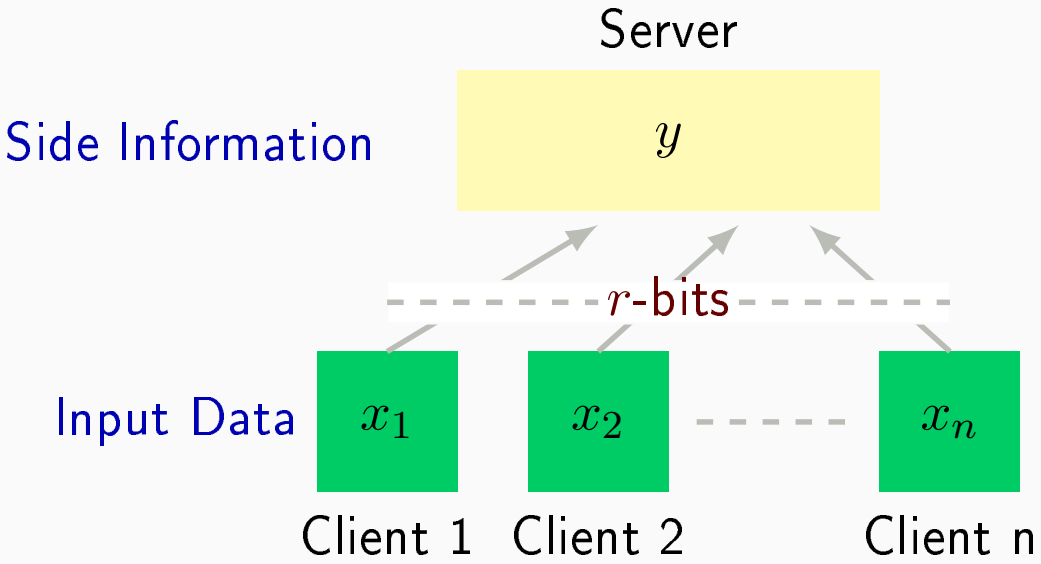

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Two settings:

1. The known setting, where Δ is known to everyone;
2. The unknown setting, where Δ is unknown to everyone.

Our Contributions

Prior Work: The no side information case [Suresh et al. 17]

- $\|x_i\|_2 \leq 1$, for all $i \in [n]$, and no side information.
- For any $r \in [d]$, $MSE \approx \Theta\left(\frac{d}{nr}\right)$.

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3. Our algorithms are nearly linear time.

Thank You!