Computing *i**

- The argument shows that the central server receives i^*

- Can send all $O(s^{p-1} \cdot \log^3 n)$ coordinates to all servers and ask for $x_i(j)$

- Requires a total of $O(s^p \cdot \log^3 n)$ communication

- Coordinator needs to find a small set S such that $i^* \in S$

- We show such S with $|S| \leq \mathrm{polylog}(n)$ can be computed by computing approximations to $\mathbf{e}_i^{-1} x_i^p$ for all i by using the sampled coordinates and their values at the sampled servers

- Critically uses the properties that individual contribution of $i*$ is quite large and that $\mathbf{e}_{i*}^{-1} x_{i*}^{p}$ is significant fraction of $\sum_i \mathbf{e}_i^{-1} x_i^k$

- Ask the servers for $x_i(j)$ for only $i \in S$ -- $O(s \cdot \text{polylog}(n))$ communication

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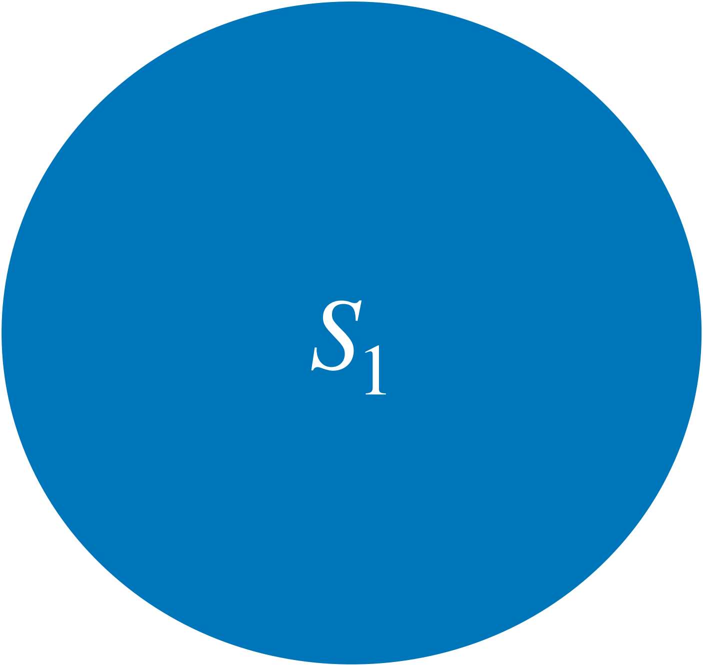
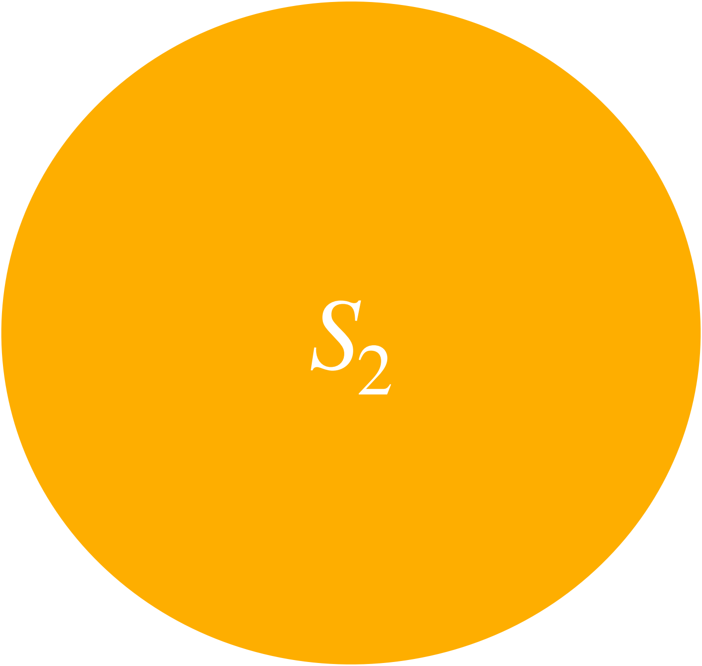
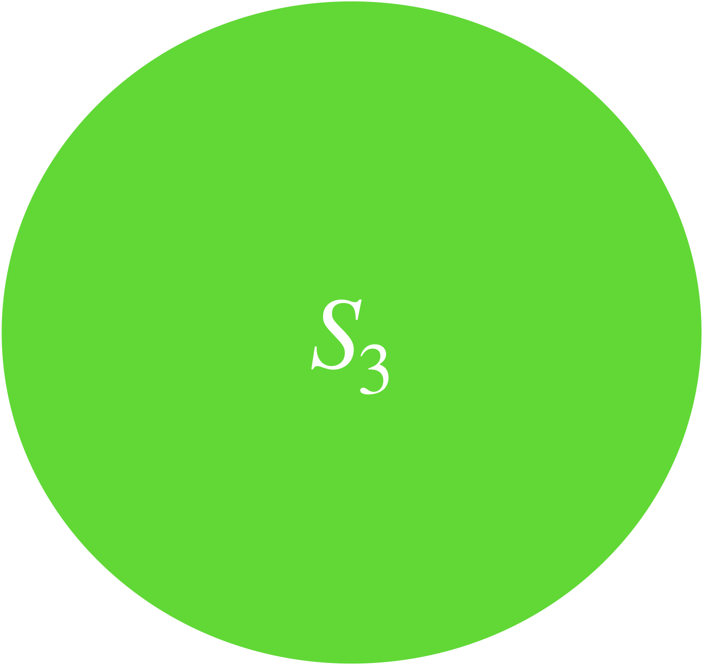
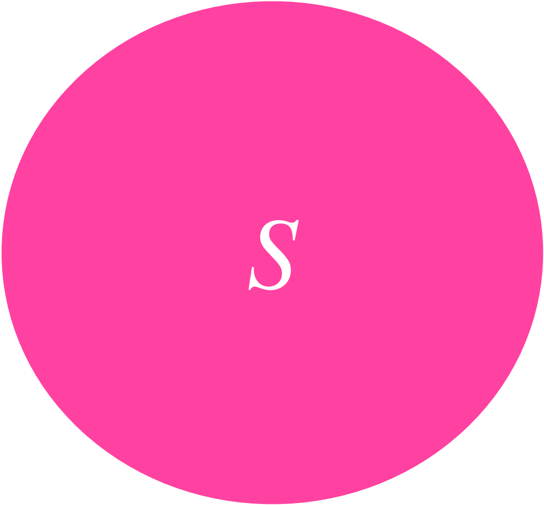
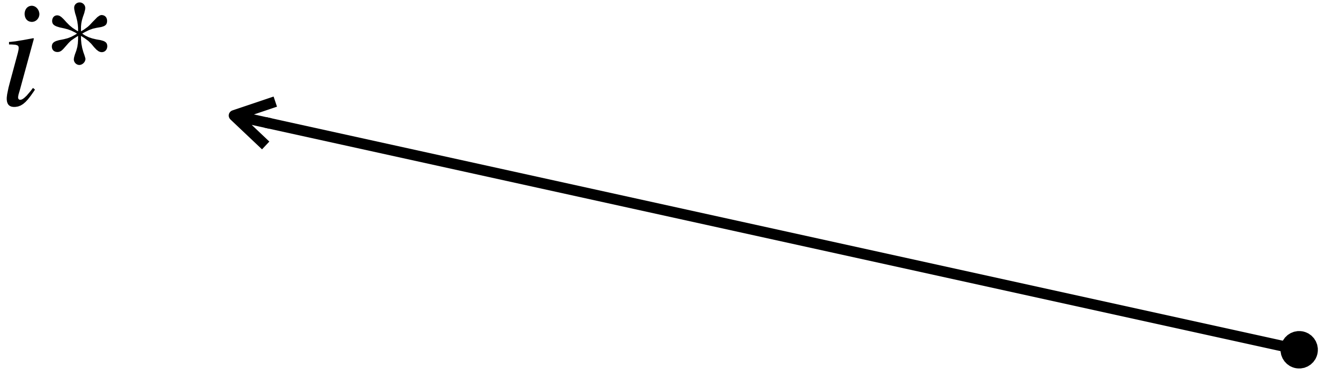

S_1

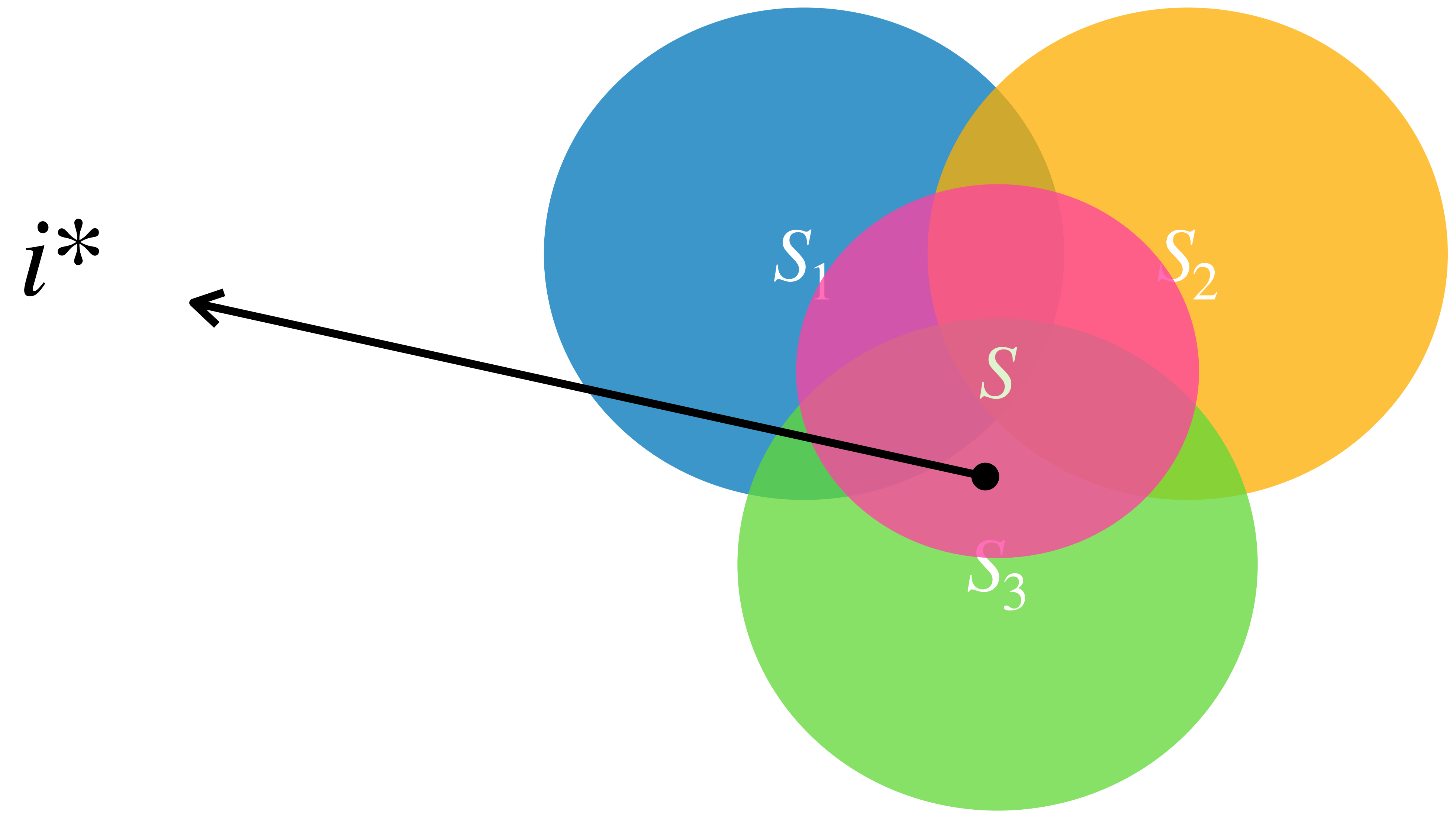

S_2


S_3


S


i^*

Computing i^*



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Extending to general functions f