

Client Selection Algorithms

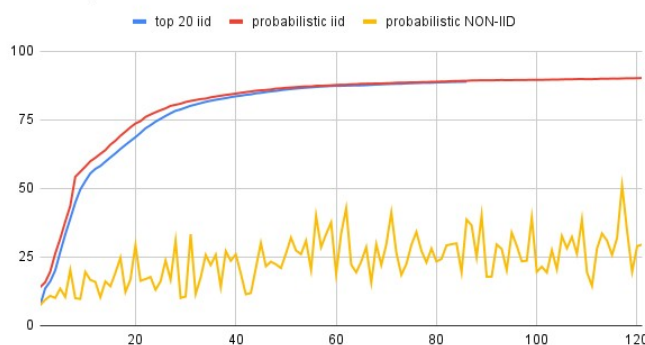
Idea: Choose which clients participate in a given global round based on an average of their previous turnaround time.

Methodology: Clients' past response time is measured and stored in a DynamoDB table; exponential weighted averaging is applied.

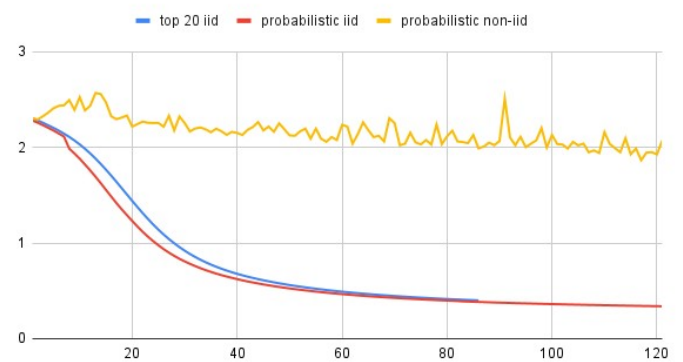
Algorithms:

- Top 20 algorithm: top 20 fastest clients are selected
- Probabilistic algorithm: client turnaround times are normalized to be between 0 and 1, which becomes their probability of being chosen.

Accuracy



Loss



Regions of the top 12 fastest clients by the last round:

Top 20, IID data

Ohio
Ohio
California
London
London
Virginia
Virginia
London
Virginia
Virginia
Virginia
London

Probabilistic, IID data

California
Ohio
Ohio
Ohio
London
California
California
California
Virginia
Virginia
Virginia
Virginia

Probabilistic, Non-IID data

Virginia
Virginia
Ohio
Ohio
Ohio
London
Ohio
Ohio
Virginia
London
Ohio
Ohio