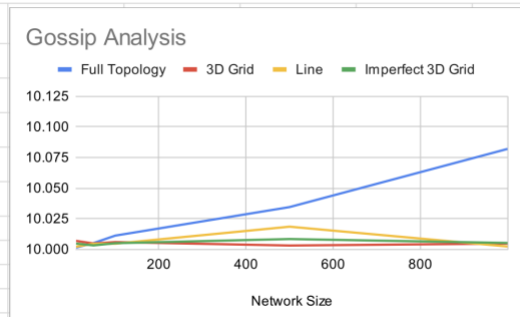


# REPORT FINDINGS

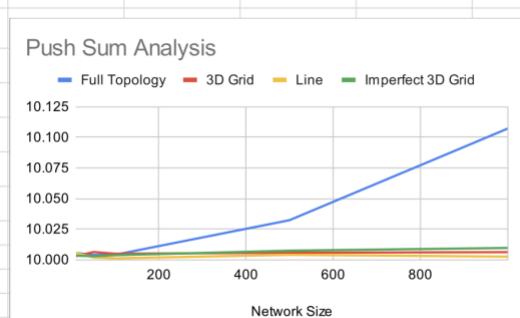
By Shrey Gupta & Yash Bhalla

GitHub: <https://github.com/yashbhalla/GossipAlgorithm>

Network Size	Full Topology	3D Grid	Line	Imperfect 3D Grid
10	10.0013	10.0068	10.002	10.0046
50	10.005	10.0047	10.0045	10.0031
100	10.0111	10.0058	10.0045	10.0049
500	10.0344	10.003	10.0184	10.0083
1000	10.0819	10.0046	10.0022	10.0051



Network Size	Full Topology	3D Grid	Line	Imperfect 3D Grid
10	10.0054	10.0028	10.0054	10.0032
50	10.0038	10.0062	10.0018	10.0027
100	10.004	10.0048	10.001	10.0036
500	10.0322	10.0056	10.0039	10.0073
1000	10.107	10.0061	10.0024	10.0095



Based on the graphs and data provided, here are some interesting findings:

## 1. Consistency Across Topologies:

Both Gossip and Push-Sum algorithms exhibit similar convergence times across different topologies, indicating that the network structure has a limited impact on convergence speed for the tested sizes.

## 2. Minimal Variation:

The convergence times are relatively stable across different network sizes, suggesting that both algorithms handle increases in network size efficiently.

## 3. Algorithm Performance:

Push-Sum generally shows slightly faster convergence compared to Gossip, particularly in larger networks. This might be due to its efficient handling of information distribution.

## 4. Topology Impact:

Although the convergence times are close, there is a slight trend where the Full topology tends to have marginally longer convergence times compared to others, possibly due to the overhead of maintaining more connections.

## 5. Scalability:

The data suggests good scalability for both algorithms, as the increase in convergence time is not dramatic even as network size grows to 1000 nodes.