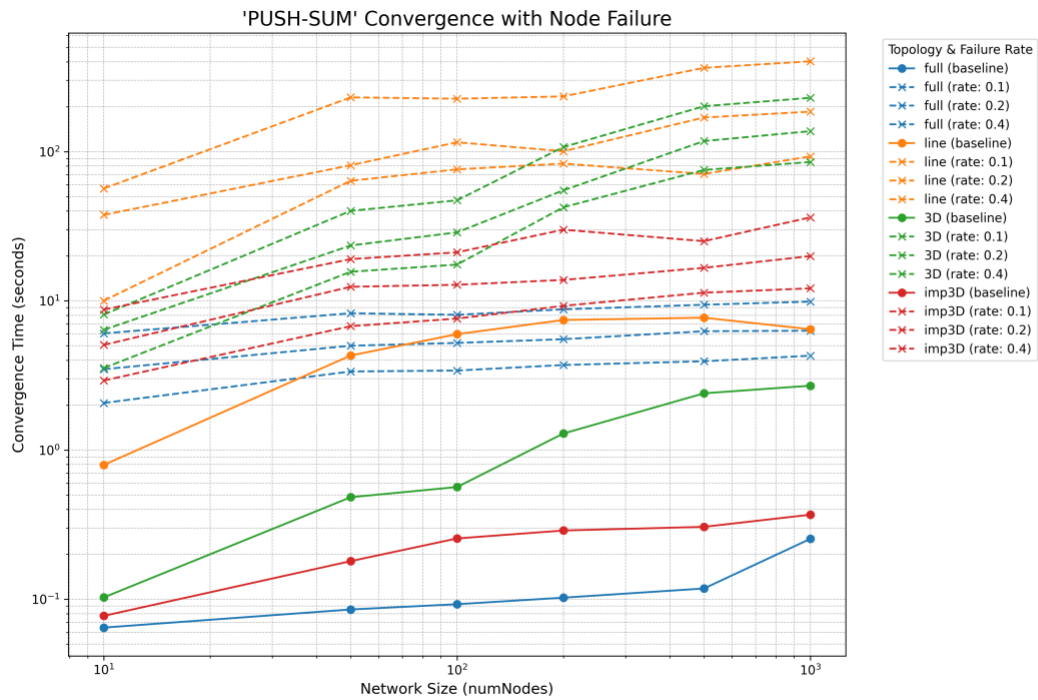
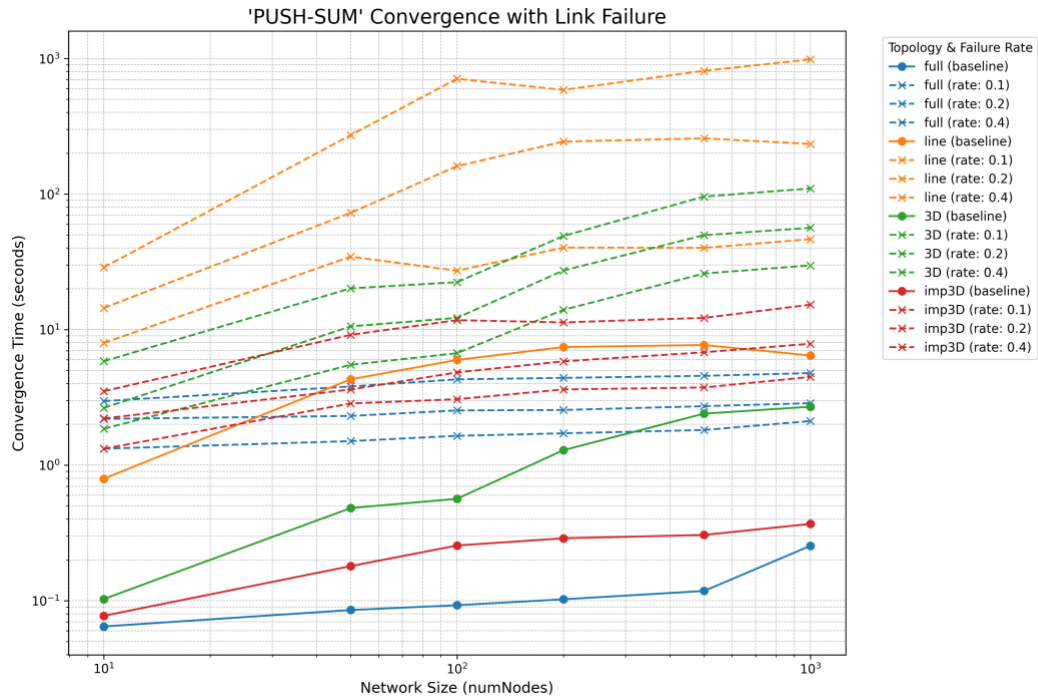


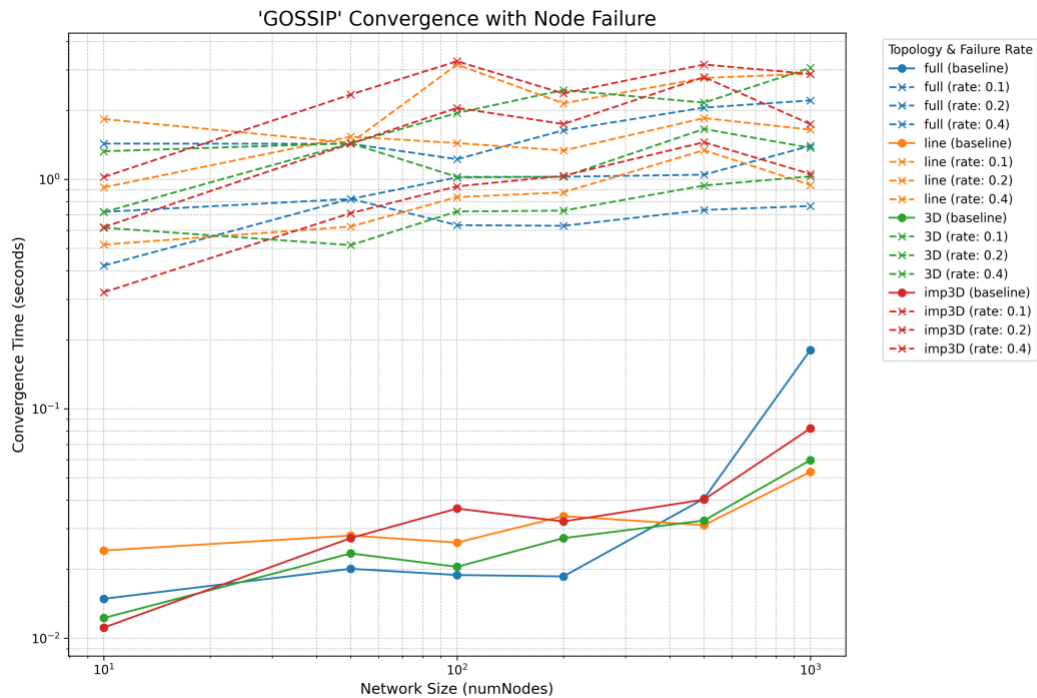
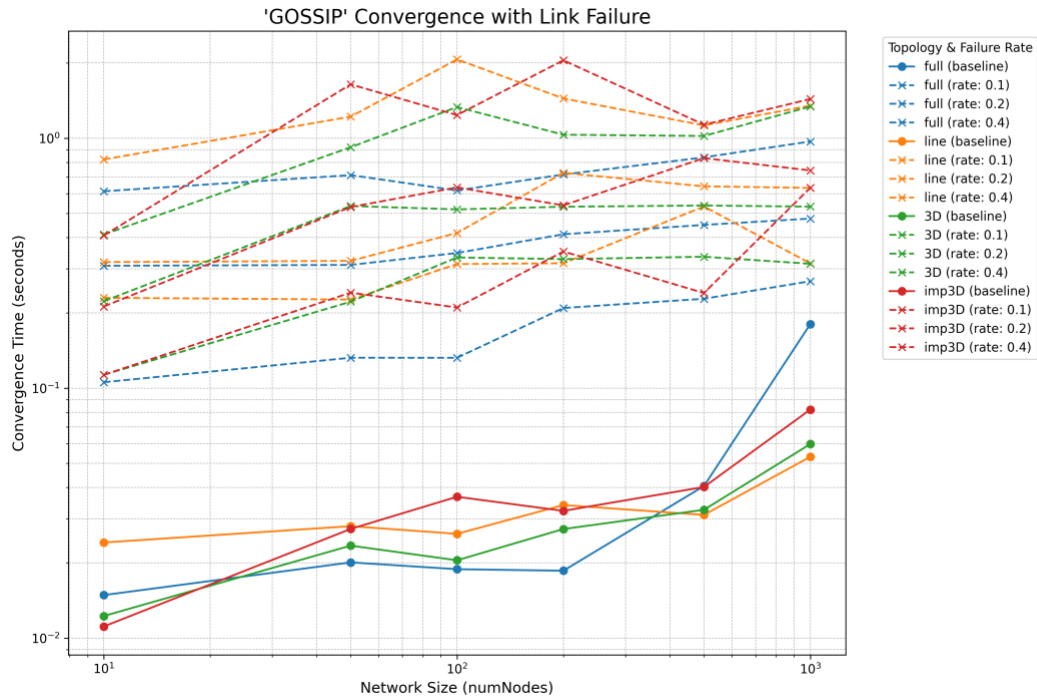
Project2 – Bonus

Team Members

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- The bonus project implements 2 types of failure modes
- Link failures – where the node sending messages gets disconnected, it continues to accumulate messages but cannot send any until the link is reestablished
- Node failures – Nodes get taken down at some given percent of rounds
- For the sake of implementation, the user can provide a failure rate along with a timeout
 - o The failure rate is the percentage of the number of nodes that get shutdown or links that get disconnected (depending on the failure mode) every round
 - o The timeout is the time after which the node gets restored/ link gets reestablished and messages get sent
- Experiments were ran with a timeout of 100 ms and varying rates of 0.1 0.2 and 0.4 failure rates for each of the algorithm-topology combinations
- Given that the failure testing was done using a probabilistic model any timing information should be taken with a grain of salt. Of course a general trend of number of nodes being directly proportional to time increases with failure rates is observed as expected
- Even a 10% failure rate seems to drastically increase the time of convergence





- The line topology seems to perform the worst with the Pushsum algorithm with or without failures
- Trends without failure also seem to follow the same general pattern as the times without failure just extrapolated with the number of failures