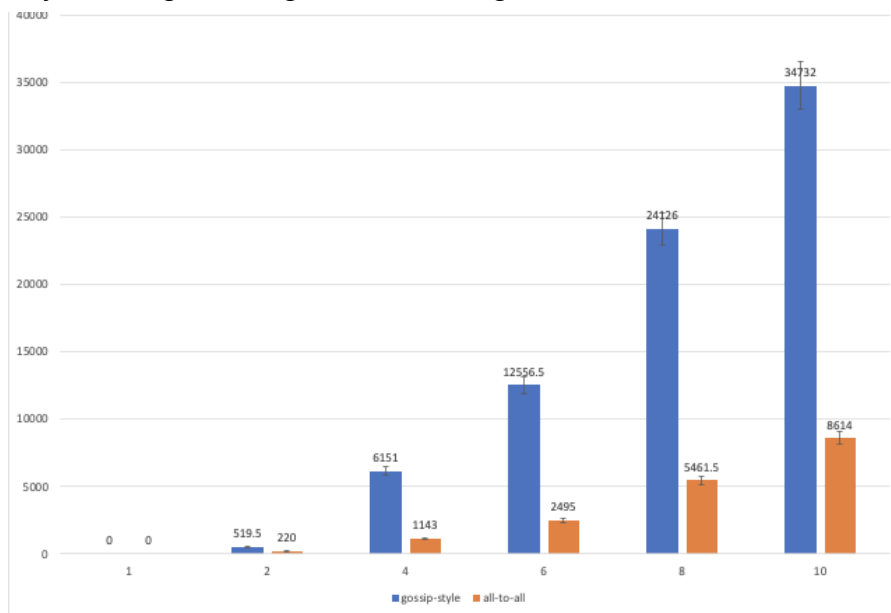


CS425 MP1 Report

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(i) Plot of bandwidth when $K=3$. **X-axis**: number of machines. **Y-axis**: each machine receives bytes per second. From the plot, we see that when the number of machines increases, the bandwidth also increases largely. However, gossip-style seems to have a much larger bandwidth than all-to-all. It may be because gossip-style messages need to send the whole membership but all-to-all just one of the members. However, when we have many machines, we can expect that gossip-style will have a smaller bandwidth because of only sending messages to its K neighbors.



(ii) We define our false positive rate as **one over the smallest number of servers we opened until we find the first false positive failure**, we open a new server every 2 or 3 seconds. The rate decreases when the message loss decreases. We see that gossip-style will have a larger false positive rate than all-to-all, which is because servers do not send the messages to all other servers but only $K=3$.

