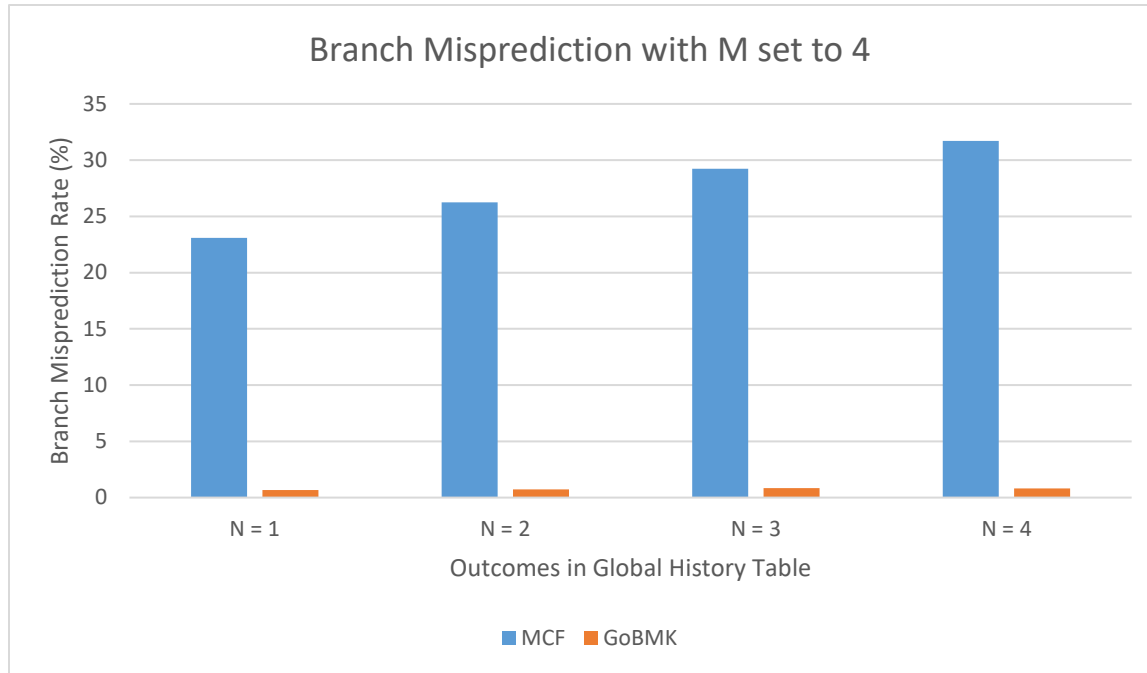


Gshare Branch Predictor Report

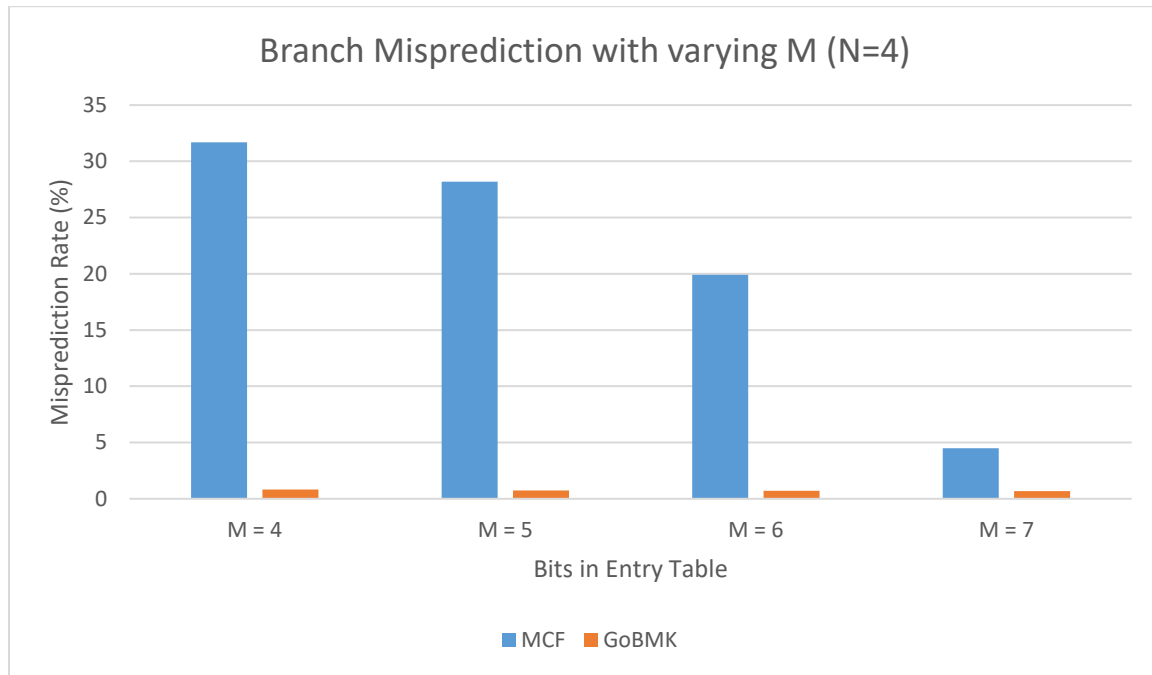
Ty Abbott – ty937650

M at 4 bits with varying N



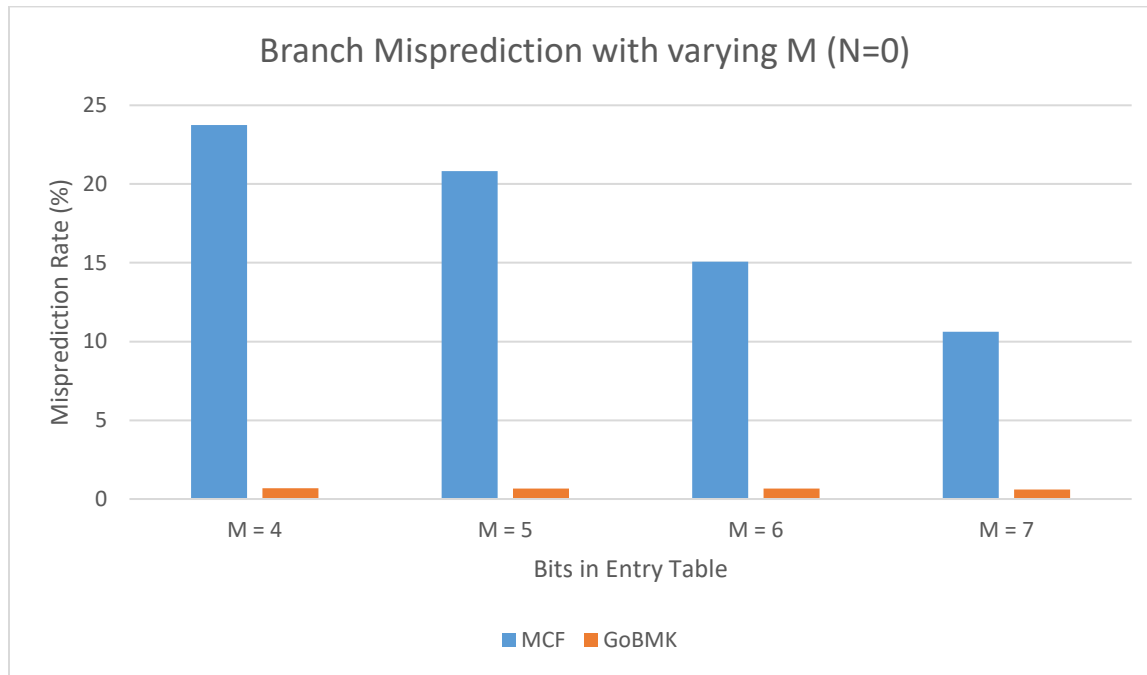
For both MCF and GoBMK traces the misprediction rate increased as N increased. This shows that while keeping the entries table at the same size, increasing the number of global entries actually decreases the number of correct predictions. This goes against my intuition as I would have guessed that having a larger global prediction table would lead to more accuracy. For these trace files that was not the case. My guess is a size of 4 bits is too small of entry table size to correctly track branch behavior.

N at 4 bits with varying M



These results make a lot of sense. When you increase the size of the Entry Table, you expect the number of mispredictions to decrease. That is exactly what happens. The Mispredictions for the MCF trace go down a lot and the mispredictions for the GoBMK trace go down slightly, but the number of mispredictions for GoBMK was already very low.

N at 0 bits with varying M



The misprediction rate follows the same trend as the previous result set with N set to 4. As the Entry Table gets bigger the amount of mispredictions gets smaller. The rate for the GoBMK trace is slightly higher for N=4 than it is for N=0 for every size of entry table. This shows that for that trace, the global prediction register is actually leading to worse predictions than not having it at all. This is mostly the same for the MCF trace, except for when the size of the entry table is 7. The misprediction rate for N=4 drops to less than 5%, whereas for N=0, the misprediction rate is over 10%. This hints to me that the global prediction register is only effective when it reaches a certain size for certain traces. Perhaps if M was larger and N was larger we would see this trend continue.