University of Central Florida

Department of Computer Science

CDA 5106: Fall 2022

Machine Problem 2: Branch Prediction

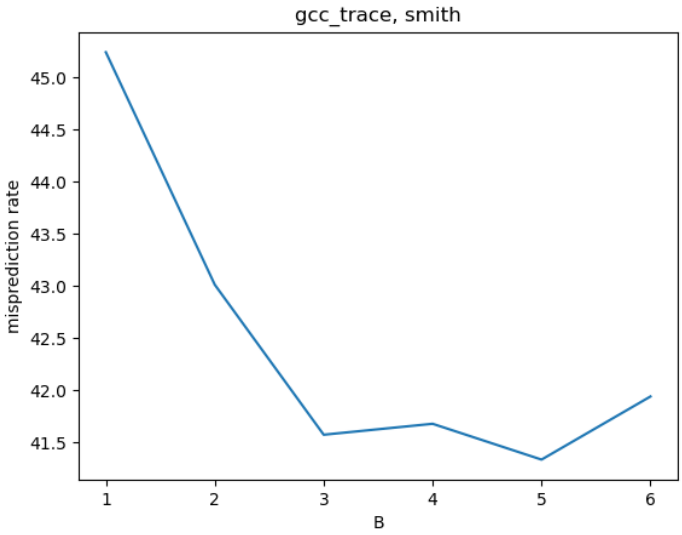
by

<< John Murphy >>

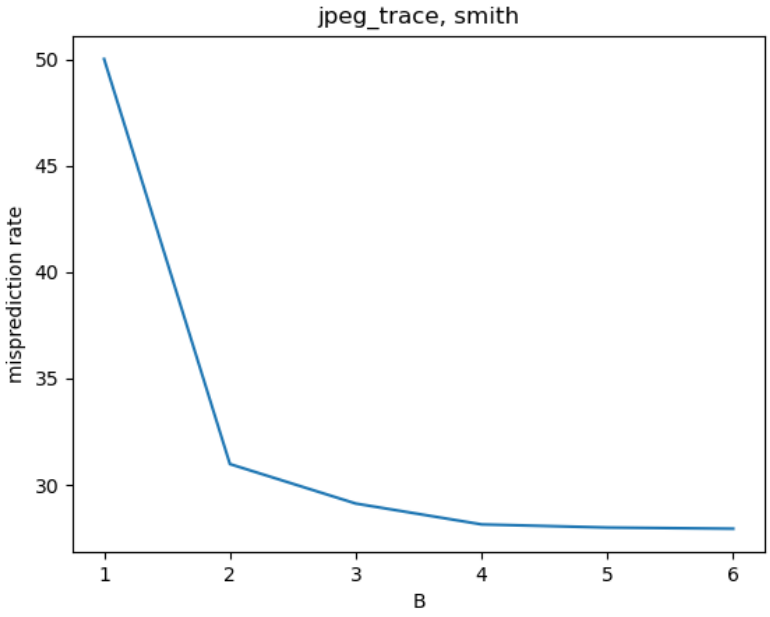
Honor Pledge: "I have neither given nor received unauthorized aid on this test or assignment."

Student's electronic signature: **John Murphy**
(sign by typing your name)

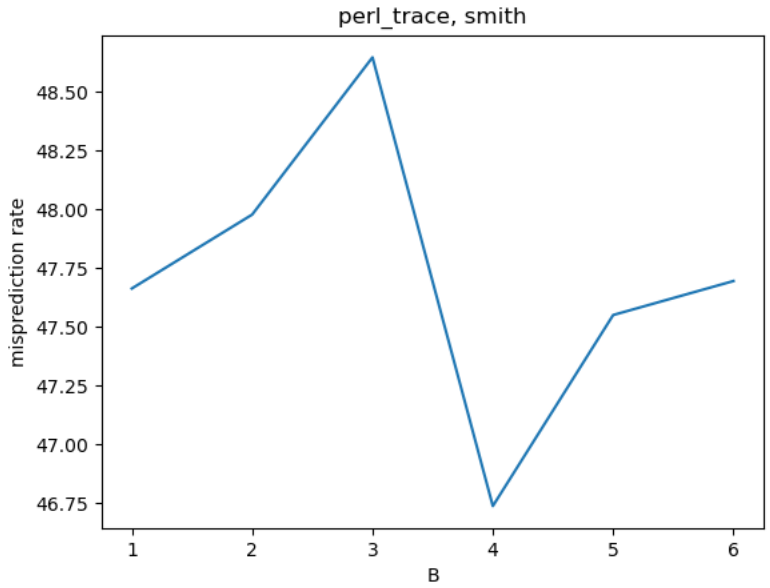
Smith



The miss prediction rate for smith on gcc_trace severely reduces once it hits 3, and tapers off, rising on 4, falling on 5, and rerising on 6.

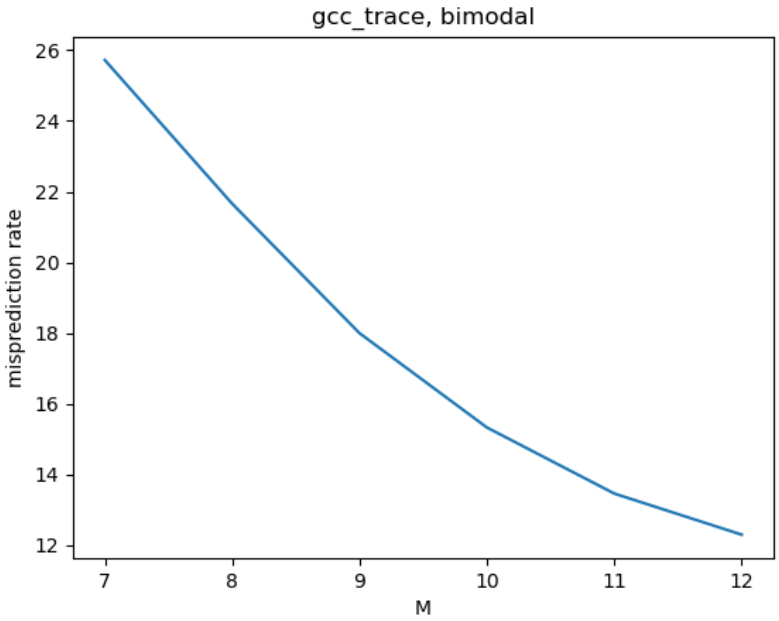


The misprediction rate for JPEG for smith, severely drops at 2, and then slowly falls almost logistically as we reach 6.

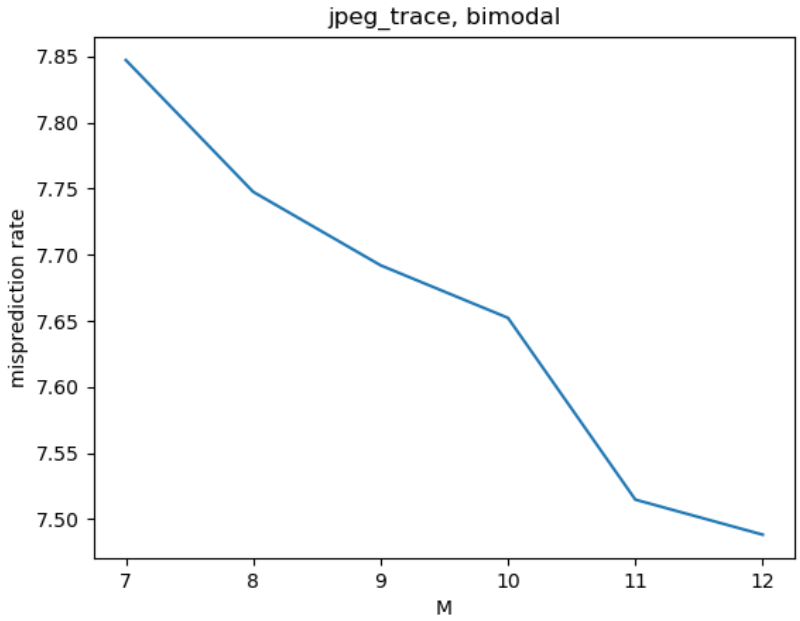


Perl for smith escalates from 1 to 3, then severely drops at 4 and then re-rises for 5 and 6.

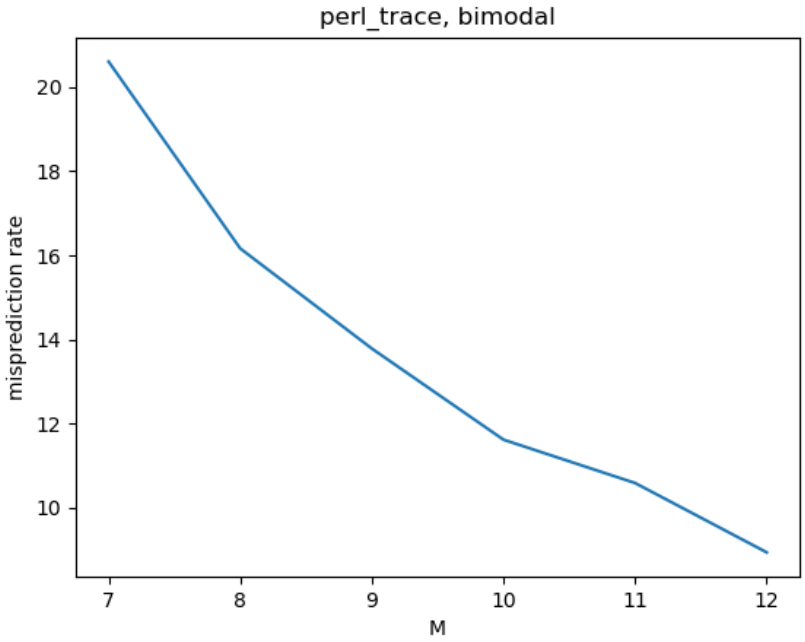
Bimodal



For bimodal gcc_trace, it’s a smooth decline for the misprediction rate all the way from 7 to 12.

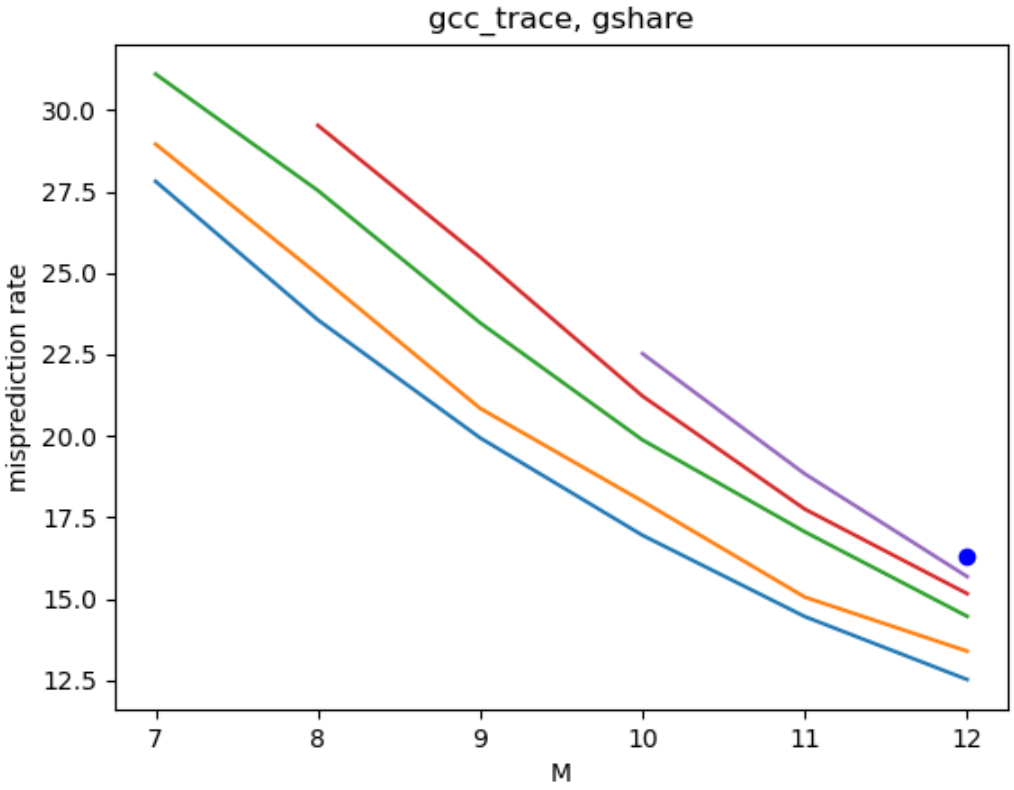


For jpeg bimodal, it has somewhat similar attributes that gcc_trace had however, the descent is not as smooth. From 10 to 11, it has a severe drop.

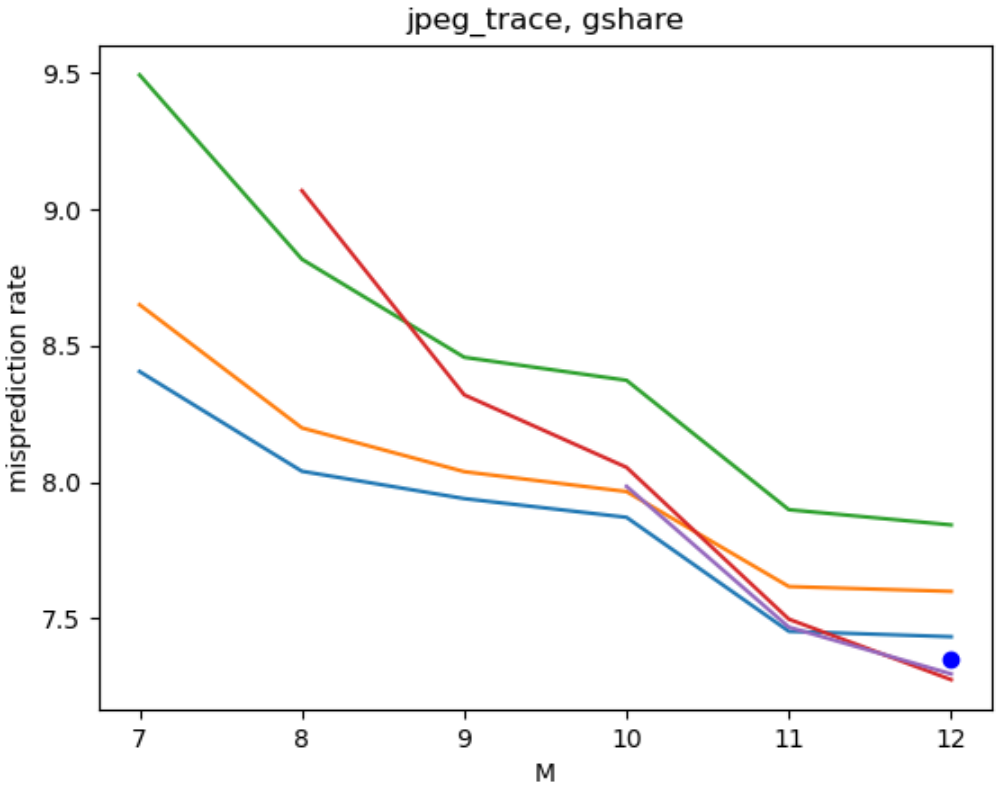


All three bimodal runs had descents. In perl_trace, it has a somewhat smooth decline with some sharp declines from 8 to 10.

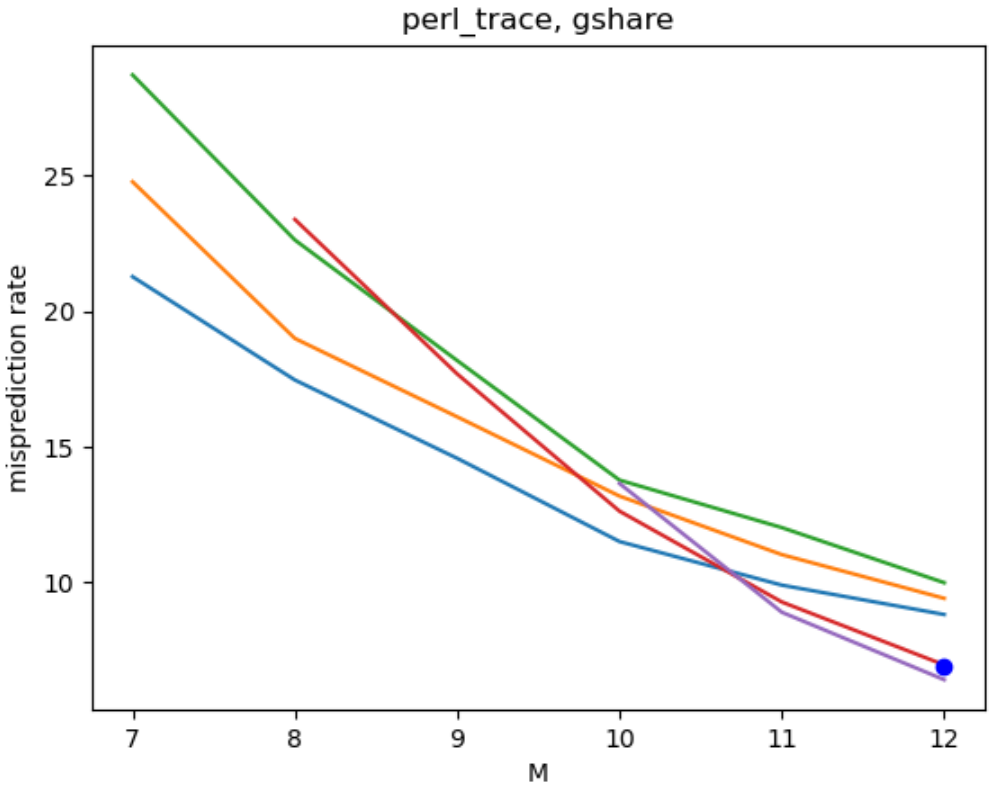
GSHARE



All values decline at a standard rate.



These values decline at sporadic and varying rates. It seems at when M = 10, it has a little sharp incline and drops back at 11 and tapers off at 12.



Standard decline, but at 10 a little sharp decline and continues to descend.