WORMHOLE: WISELY PREDICTING MULTIDIMENSIONAL BRANCHES JORGE ALBERICIO, JOSHUA SAN MIGUEL, NATALIE ENRIGHT JERGER AND ANDREAS MOSHOVOS

CONTRIBUTIONS

- Present *wormhole*, a novel low-cost side-predictor that is specialized for multidimensional branches.





• Identify branches that exhibit *multidimensional* correlations. These are branches that (1) are enclosed within nested loops and (2) exhibit correlation across iterations of the outer loops.





| 0 | 1 | 1 |
|---|---|---|
| 0 | 1 | 1 |
| 0 | 1 | 1 |

| to j=N-1 | | | | | |
|----------|---|---|---|----------|--|
| | 0 | 0 | 0 | i=0 | |
| | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | to i=N-1 | |