Assignment 5: Implementation of the Bingo prefetcher in Tejas

Implement the Bingo[1] prefetcher in Tejas. Evaluate its efficacy in terms of both instruction throughput (IPC) as well as last level cache hit rate. Compare with a system that uses the Power4 prefetcher in the last level, as well as with a system that does not use any prefetcher in the last level.

a) Evaluate using the given SPEC CPU2017 benchmarks.
b) Come up with toy benchmarks of your own that will exercise the prefetcher in different ways. You will get more marks for being creative and coming up with a large number of interesting benchmarks.

Deadline: 23:55, 08/11/2023 (4 weeks)
Marks: 10

[1] Bakhshalipour, Mohammad, et al. "Bingo spatial data prefetcher." HPCA 2019