CS230 Project

210050019-210050109-210050111

April 2023

1 Commands to Run

To Generate the Reported Results.
Direct to ChampSim Directory, Run the below commands

`./s3.sh`

This will generate the percentage IPC change for the traces given in the script in the file out.txt. Then run

`python3 plot.py`

This will generate a plot for the IPC changes using out.txt generated by above step.
Make sure traces folder has these listed traces.

2 Result

After running our modified IPCP which we named as ipcp3 for L1, L2 and LLC cache, we got these changes in IPC values for each of the above listed traces -

```
600.perlbench\_s-1273B.champsimtrace.xz
change in IPC: .19093709118071480353

603.bwaves\_s-891B.champsimtrace.xz
change in IPC: .13354477923378682914

607.cactuBSSN\_s-2421B.champsimtrace.xz
change in IPC: 1.43953065939298458065

623.xalancbmk\_s-165B.champsimtrace.xz
change in IPC: .53877051044693809348

654.roms\_s-1007B.champsimtrace.xz
change in IPC: -.01899554748944087864
```

600.perlbench_s-210B.champsimtrace.xz
change in IPC: .06948550074083805936

605.mcf_s-1536B.champsimtrace.xz
change in IPC: -2.22437556947196390090

607.cactuBSSN_s-3477B.champsimtrace.xz
change in IPC: .91509032404880010092

623.xalancbmk_s-202B.champsimtrace.xz
change in IPC: 1.48903300804551989966

654.roms_s-1070B.champsimtrace.xz
change in IPC: 1.72874493927125506072

600.perlbench_s-570B.champsimtrace.xz
change in IPC: .54946617087021255901

605.mcf_s-1554B.champsimtrace.xz
change in IPC: 8.60849434390475435736

607.cactuBSSN_s-4004B.champsimtrace.xz
change in IPC: 1.69248554367245628267

627.cam4_s-490B.champsimtrace.xz
change in IPC: 1.74350703520382626105

654.roms_s-1390B.champsimtrace.xz
change in IPC: 1.22917894060030742863

602.gcc_s-1850B.champsimtrace.xz
change in IPC: 6.55130601817578207524

605.mcf_s-1644B.champsimtrace.xz
change in IPC: 4.58118506619685467782

619.lbm_s-2676B.champsimtrace.xz
change in IPC: -1.55925905726666091965

628.pop2_s-17B.champsimtrace.xz
change in IPC: 1.34177583168298842638

654.roms_s-1613B.champsimtrace.xz
change in IPC: -.07257315766214424624

602.gcc_s-2226B.champsimtrace.xz
change in IPC: 2.94659127200315605568

605.mcf_s-472B.champsimtrace.xz
change in IPC: 29.76062509036277116688

620.omnetpp_s-141B.champsimtrace.xz
change in IPC: .79587449136885003277

641.leela_s-1083B.champsimtrace.xz
change in IPC: 1.34461412833521611046

654.roms_s-293B.champsimtrace.xz
change in IPC: -.00885073239810594326

602.gcc_s-734B.champsimtrace.xz
change in IPC: 20.56628520232388447079

605.mcf_s-484B.champsimtrace.xz
change in IPC: 30.09817730004356776170

620.omnetpp_s-874B.champsimtrace.xz
change in IPC: 1.62892024221511586765

649.fotonik3d_s-10881B.champsimtrace.xz
change in IPC: -3.89531202363922046856

654.roms_s-294B.champsimtrace.xz
change in IPC: .81976685397316076097

603.bwaves_s-1740B.champsimtrace.xz
change in IPC: 1.45409587620642897024

605.mcf_s-665B.champsimtrace.xz
change in IPC: 1.11925424899169818427

621.wrf_s-6673B.champsimtrace.xz
change in IPC: 3.84083386849775230944

649.fotonik3d_s-1176B.champsimtrace.xz
change in IPC: 5.50202154112005909627

657.xz_s-2302B.champsimtrace.xz
change in IPC: 6.17806169970551985624

603.bwaves_s-2609B.champsimtrace.xz
change in IPC: 1.63417316135453370682

621.wrf_s-8065B.champsimtrace.xz
change in IPC: 10.33055654023395958879

649.fotonik3d_s-7084B.champsimtrace.xz
change in IPC: .00122371243202833673

```
603.bwaves\_s-2931B.champsimtrace.xz
change in IPC: -.54362227577571373169

623.xalancbmk\_s-10B.champsimtrace.xz
change in IPC: -1.34003701574218241794

649.fotonik3d\_s-8225B.champsimtrace.xz
change in IPC: 4.62843121393517769508
```

Overall change - 3.55 percent improvement