

Local Branch Prediction

– Jason Song

- History Length: 4
- PC Entries: 12281
- Predict:
 - Get the counter of pc with current history of pc
 - Test if counter is in the field of TAKEN
- Update:
 - Increase/Decrease the counter of pc with current history of pc
 - Update the history of current pc

- Benchmark

-	LONG-SPEC2K6-00	5.139
-	LONG-SPEC2K6-01	7.927
-	LONG-SPEC2K6-02	14.362
-	LONG-SPEC2K6-03	6.874
-	LONG-SPEC2K6-04	13.533
-	LONG-SPEC2K6-05	6.707
-	LONG-SPEC2K6-06	5.437
-	LONG-SPEC2K6-07	18.270
-	LONG-SPEC2K6-08	2.137
-	LONG-SPEC2K6-09	6.998
-	SHORT-FP-1	4.324
-	SHORT-FP-2	1.808
-	SHORT-FP-3	0.567
-	SHORT-INT-1	12.334
-	SHORT-INT-2	11.309
-	SHORT-INT-3	15.042
-	SHORT-MM-1	10.239
-	SHORT-MM-2	13.520
-	SHORT-MM-3	4.973
-	SHORT-SERV-1	5.807
-	SHORT-SERV-2	5.916
-	SHORT-SERV-3	7.210

- AMEAN 8.202
- Larger than 6.108 before

- Memory

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- Total history table size=12281(*4bits)
- Total counter table size =12281*2^4(*2bits)
- total size = 55265 Bytes