

# Lab3 Report

## Branch Prediction Hardware Implementation

2019-16515 황현태

### 1. Baseline

	bst_array	fibo	matmul	prime_fact	quicksort	spmv
CORE_CYCLE	9763	871	19365	15833	32525	42169
NUM_COND_BRANCHES	1942	200	3272	4207	5488	8302
NUM_UNCOND_BRANCHES	103	6	1029	1035	668	94
BP_CORRECT	730	137	1417	2699	2835	4061
BP_INCORRECT	1212	63	1855	1508	2653	4241
Accuracy(%)	37.59	68.5	43.31	64.15	51.66	48.92

### 2. Gshare

	bst_array	fibo	matmul	prime_fact	quicksort	spmv
CORE_CYCLE	8266	856	15789	13886	29765	41944
NUM_COND_BRANCHES	1942	200	3272	4207	5488	8302
NUM_UNCOND_BRANCHES	103	6	1029	1035	668	94
BP_CORRECT	1229	142	2609	3348	3755	4136
BP_INCORRECT	713	58	663	859	1733	4166
Accuracy(%)	63.29	71	79.74	79.58	68.42	49.82

### 3. Perceptron

	bst_array	fibo	matmul	prime_fact	quicksort	spmv
CORE_CYCLE	7933	832	15291	13250	29366	35896
NUM_COND_BRANCHES	1942	200	3272	4207	5488	8302
NUM_UNCOND_BRANCHES	103	6	1029	1035	668	94
BP_CORRECT	1340	150	2775	3560	3888	6152
BP_INCORRECT	602	50	497	647	1600	2150
Accuracy(%)	69	75	84.81	84.62	70.85	74.1