Simulation of selfish mining

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1 Selfish mining

Every simulation in this section is done using 20 nodes, 50 percent slow nodes, 50 percent low CPU nodes, with mean transaction time 1000 ms and total events of 10000.

A1 pow	**A2 pow**	**MPU(total)**	**MPU1(adv)**	**MPU2(adv)**
0	0	1	0	0
0.4	0.1	0.75	0.523095	0.4285714
0.2	0.5	0.68	0.23529411	0.73529411
0.25	0.35	0.69696	0.1304347	0.826596
0.25	0.25	0.59	0	0.77570
0.5	0.5	1	0	0
0.6	0.3	0.62	0.821428	0.142857

Table 1: Sample Table

2 observations

- when both nodes have their hashing power close with a slight difference the attacker with higher hashing power dominates the lvc with other attackers contribution 0 (or vice versa
- If attackers have lower hashing power then there will be more forking in the blockchain
- As hashing power of an attacker increases then MPU of that attacker increases because he mines block more frequently

3 plots

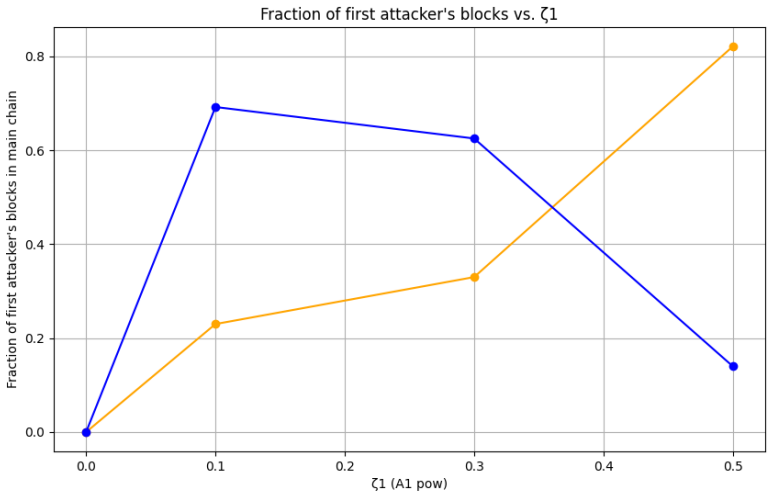

Figure 1: hashing power of attacker 2 is 0.3

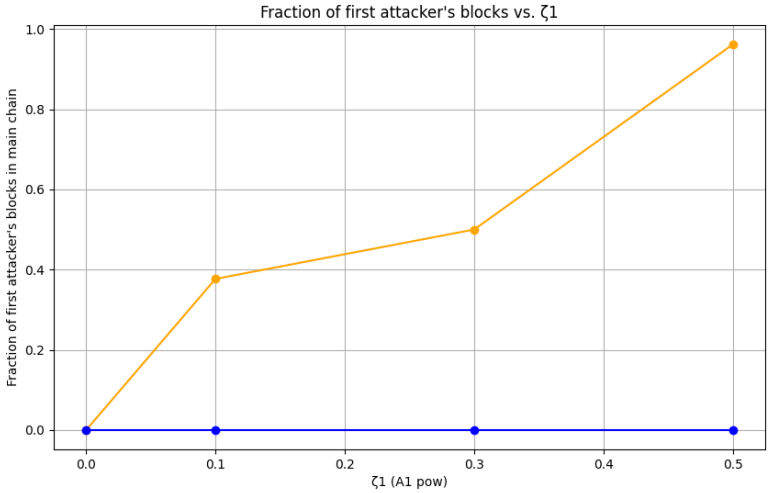

Figure 2: hashing power of attacker 2 is 0