

Distributed Nash Equilibrium Seeking On a Consensus based Gaming

Ryan Kung

ryankung@ieee.org

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Definition

We defined DGaming as a series of Gaming Behaviors and Strategies which is Distributed. With Lamport's definition on 1978, A Gaming is Distributed if the message transaction delay is not negligible compared to the time between event in classic gaming behavior.

Lamport TimeStamp

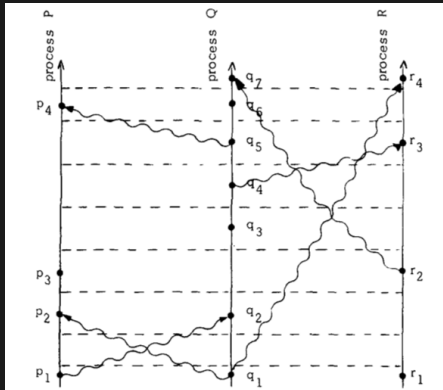


Figure: Lamport TimeStamp

Example A

	L	R
U	(1,3)	(-3,0)
M	(-2,0)	(1,3)
D	(0,1)	(0,1)

With Repeated Advantage Solution:

	L
U	(1,3)

Example B

Prisoner's Dilemma

	W	A
W	(1,1)	(-1, 2)
A	(2,-1)	(0,0)

If players are sensitive on the uncertainty of s_{-1} , they may not choose the rational strategy.

