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# A New Local Rule for Convergence of ICLA to a Compatible Point

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Abstract

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Keywords

Many problems in the modern world have a decentralized and distributed nature. Irregular learning automata (ICLA) is a powerful mathematical model for decentralized problems applications. Convergence of ICLA to a compatible point is very important because this can provide efficient solutions for the problems. The local rule of ICLA can play a key role in convergence. A local rule that simply rewards or punishes learning automata just based on the response of environment and actions of neighbors does not guarantee convergence of ICLA to a compatible point. In this paper, we present a new local rule that guarantees convergence of ICLA to a compatible point. Formal proofs for the convergence are provided and results of the computer experiments support our theoretical findings.

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