

# Irregular Cellular Learning Automata

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Abstract

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Keywo

Cellular learning automaton (CLA) is a recently introduced model that combines cellular automaton (CA) and learning automaton (LA). The basic idea of CLA is to use LA to adjust the state transition probability of stochastic CA. This model has been used to solve problems in areas such as resource assignment in cellular networks, call admission control, image processing, and very large scale integration placement. In this paper, an extension of CLA called irregular CLA (ICLA) is introduced. This extension is obtained by removing the structure regularity assumption in CLA. Irregular structure of ICLA is needed in some applications, such as computer networks, web mining, and data computing. The concept of expediency has been introduced for ICLA and then, conditions under which an ICLA becomes expedient are analytically found.

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