An Evolutionary Learning Method to Select Relevant Information through a System Dynamics Model

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Management Information System (MIS) provides more and more information as information technology advances. However, abundant information does not necessarily lead to better decision making. In this paper, we proposed a method to improve current MIS by combining the genetic algorithm and the artificial neural network to select relevant information for decisions through a system dynamics model. The metaphor of the operational logic is to create a group of agents with trial-and-error learning capability to play the microworld provided. Those agents with better performance were then selected to mate and reproduce a child generation which can inherit the decision rule learned by the parent generation. This evolution process repeated until the performance of the whole generation can improved no more. The agent with the best performance was thus selected, and its decision rule can produce the highest performance for the microworld. Therefore, the information being used is the relevant information.