ON LEARNING AUTOMATA

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Definition of machine learning is discussed and learning by trial and error using probability driven automata is investigated.

The automation is taught to find the solution of a task by searching a solution graph. The search is directed by probabilities assigned to the graph

modes, which are increased or decreased according to the success of the search. After a solution path (route) has been found it is stored in memory and the probabilities of the modes are restored to the unbaised state for the next search. The learned routes are stored in a memory stack to be recalled if the same task is to be performed again. The most recently learned route is stored on the top of the memory stack: repetition of learning of an already learned route will rearrange the memory stack. Bottomless stack simulates forgetting. Conceptualization is simulated by using a learning algorithm to teach the machine to recognize certain concepts and to create algorithm to construct them. Heuristic programs are used to simulate the automata under investigation.