

In the present work, we study possibilities of using artificial neural networks for accelerating of evolutionary algorithms. Improving consists in decreasing in number of calls to the fitness function, the evaluation of which is in some kinds of optimization problems very time-consuming and expensive. We use neural network as a regression model, which serves for fitness estimation in a run of evolutionary algorithm. Together with the regression model, we work also with the real fitness function, which we use for re-evaluation of individuals that are selecting according to a beforehand chosen strategy. These individuals re-evaluated by the real fitness function are used for improving the regression model. Because a significant number of individuals are evaluated only with the regression model, the number of calls to the real fitness function, that is needed for finding of a good solution of the optimization problem, is substantially reduced.