

Transfer Knowledge From Multiple Source Problems to a Target Problem in Genetic Algorithm

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Abstract : To study how to transfer knowledge from multiple source problems to the target problem, we modeled the Transfer Learning (TL) process using Genetic Algorithms as the model solver. TL is the process that aims to transfer learned data from one problem to another problem. The TL process aims to help Machine Learning (ML) algorithms find a solution to the problems. The Genetic Algorithms (GA) give researchers access to information that we have about how the old problem is solved. In this paper, we have five different source problems, and we transfer the knowledge to the target problem. We studied different scenarios of the target problem. The results showed combined knowledge from multiple source problems improves the GA performance. Also, the process of combining knowledge from several problems results in promoting diversity of the transferred population.

Keywords : transfer learning, genetic algorithm, evolutionary computation, source and target

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