Partial Knowledge Transfer Between the Source Problem and the Target Problem in Genetic Algorithms

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Abstract : To study how the partial knowledge transfer may affect the Genetic Algorithm (GA) performance, we model the Transfer Learning (TL) process using GA as the model solver. The objective of the TL is to transfer the knowledge from one problem to another related problem. This process imitates how humans think in their daily life. In this paper, we proposed to study a case where the knowledge transferred from the S problem has less information than what the T problem needs. We sampled the transferred population using different strategies of TL. The results showed transfer part of the knowledge is helpful and speeds the GA process of finding a solution to the problem.