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# A novel discrete binary gaining-sharing knowledge-based optimization algorithm for the travelling counselling problem for utilization of solar energy

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**Abstract-**

**This article proposes a novel binary version of recently developed Gaining-Sharing knowledge-based optimization algorithm (GSK) to solve binary optimization problems is proposed. GSK algorithm is based on the concept of how humans acquire and share knowledge during their life span. Discrete Binary version of GSK named novel binary Gaining Sharing knowledge-based optimization algorithm (DBGSK) depends on mainly two binary stages: binary junior gaining sharing stage and binary senior gaining sharing stage with knowledge factor 1. These two stages enable DBGSK for exploring and exploitation of the search space efficiently and effectively to solve problems in binary space.An improved scheduling of the technical counselling process for utilization of the electricity from solar energy power stations is introduced. The scheduling aims at achieving the best utilization of the available day time for the counselling group,n this regard,a new application problem is presented, which is called a Travelling Counselling Problem (TCP).A Nonlinear Binary Model is introduced with a real application.**



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