

Multiobjective invasive weed optimization

Nikoofard et al. (2012) propose an algorithm based on the behavior of invasive weed species.

Questions

1. Explain what a multiobjective optimization problem is. How does it compare to single-objective optimization problems? Give realistic examples. What methods exist for solving multiobjective optimization problems? Do these obtain a Pareto solution?
2. Implement IWO and compare it on an artificial example to another known method. Explain the advantages and shortcomings of both methods for the particular example you considered.

References

Nikoofard, A. H., Hajimirsadeghi, H., Rahimi-Kian, A., and Lucas, C. (2012). Multiobjective invasive weed optimization: Application to analysis of Pareto improvement models in electricity markets. *Applied Soft Computing*, 12:100–112.