

## **Discrete flower pollination algorithm for patient admission scheduling problem**

### **Abstract**

This paper aims to tackle the Patient Admission Scheduling Problem (PASP) using the Discrete Flower Pollination Algorithm (DFPA), a new, meta-heuristic optimization method based on plant pollination. PASP is one of the most important problems in the field of health care. It is a highly constrained and combinatorial optimization problem of assigning patients to medical resources in a hospital, subject to predefined constraints while maximizing patient comfort. While the flower pollination algorithm was designed for continuous optimization domains, a discretization of the algorithm has been carried out for application to the PASP. Various neighborhood structures have been employed to enhance the method and to explore more solutions in the search space. The proposed method has been tested on six instances of benchmark datasets for comparison against another algorithm using the same dataset. The prospective method is shown to be very efficient in solving any scheduling problem.

### **Keywords**

Combinatorial optimization; Discretization; Flower pollination algorithm; Meta-heuristics; Patient admission scheduling problem