

METHOD AND SYSTEM FOR ROSTERING USING MULTIPLE LAYERED AND SEGMENTED PHEROMONE-BASED COOPERATING AGENTS

ABSTRACT

The present invention provides an improved ACO-based rostering method and system for optimal roster solutions with high efficiency. In one aspect of the present invention, there is provided a method for rostering a plurality of staff with duty assignments within a roster period using multiple layered and segmented pheromone-based cooperating agents, wherein the duty assignment of each staff is represented by a shift list. In one embodiment, the method comprises the following operations of receiving rostering problem definition data; constructing a virtual graph comprising a plurality of staff nodes; performing main roster scheduling cycles on the virtual graph by a plurality of the multiple layered and segmented pheromone-based cooperating agents, wherein the cooperating agents utilize shifting factors to alter the shift lists and determine a roster solution; and performing fine-tuning operation on the roster solution from the main roster scheduling cycles by swapping factors, wherein a best solution is found.

FIG. 2 accompanies the abstract.