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Abstract

The computational grid provides a promising platform for the deployment of various high-performance computing applications. In computational grid, an efficient scheduling of task onto the processors that minimizes the entire execution time is vital for achieving a high performance. High throughput computing (HTC) is of great importance in grid computing environments. HTC is aimed at minimizing the total makespan of all of the tasks submitted to the grid environment in long execution of the system. To achieve HTC in grids, suitable task scheduling algorithms should be applied to dispatch the submitted tasks to the computational resources appropriately. In this paper we present a Genetic Algorithm approach for

scheduling operating room (OR) nurses. Most studies in operating room scheduling deal with patient flow analysis and physician scheduling, limited literature has focused on scheduling OR nurses. Our objective is to minimize nurses' idle time, overtime and non-consecutive assignments during overtime hours while maximizing demand satisfaction. The major constraints are: 1) shift constraints and 2) match between nurses' skill sets and surgery requirements. Due to the large size of the problem, finding an optimal solution is extremely difficult. Therefore, a Genetic Algorithms approach is proposed to find a set of good schedules in a reasonable amount of time.

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Computer Science

Index Terms

Genetic Scheduling

Keywords

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