

Scheduling Tasks to Minimize Active Time on a Processor with Unlimited Capacity

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VENUE CS Seminar Room, Y6405, 6th Floor
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ABSTRACT

We study the following scheduling problem on a single processor. We are given n jobs, where each job j_i has an integer release time r_i , processing time p_i as well as deadline d_i . The processor can schedule an unlimited number of jobs at any time t . Our objective is to schedule the jobs together such that the total number of active time slots is minimized. We present an $O(n^3)$ dynamic programming algorithm for the case of agreeable deadlines with $d_i \leq d_j$ whenever $r_i < r_j$ or all jobs are big. In the general case, we present an online algorithm with competitive ratio 4 and show that our analysis is tight.

This paper will be presented at Theory and Applications of Models of Computation (TAMC), Apr 20-22, 2017, Bern, Switzerland

Supervisor: Dr Minming Li

Research Interests: Algorithm Design and Analysis, Combinatorial Optimization, Online Algorithms, Facility Location Game with Agents' Preferences

All are welcome!



In case of questions, please contact Dr LI Minming at Tel: 3442 9538, E-mail: minming.li@cityu.edu.hk, or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/news/seminars/seminars.html>.