Department of Computer Science

COMPUTER SCIENCE SEMINAR SERIES

An FPTAS of Minimizing Total Weighted Completion Time on Single Machine with Position Constraint

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DATE 29 November 2017 (Wednesday)
TIME 11:00 am - 11:30 am
VENUE CS Seminar Room, Y6405
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ABSTRACT

In machine scheduling, a major challenge is to determine the job sequence for each machine involved, especially in non-preemptive one machine settings without idle times. Meanwhile, maintenance activities have to be performed to enhance the reliability of the machine, which makes the schedule more challenging. In this paper, we take the maintenance activity as an extra job and formulate the problem as a classical scheduling problem of minimizing the total weighted completion time on a single machine with the constraint that one specific job (maintenance job) must be scheduled at a specified position. We give dynamic programs with pseudo-polynomial running time, and a fully polynomial-time approximation scheme (FPTAS).

This paper will be present in the conference The 28th International Symposium on Algorithms and Computation (ISAAC 2017), December 09-12, 2017, Phuket, Thailand.

Supervisor: Dr LI Minming

Research Interests: Scheduling; Combinatorial Optimization

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.