



Séminaire des étudiants du CIRRELT Students Seminar

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ONLINE RESOURCE ALLOCATION PROBLEMS

ABSTRACT: This talk presents a general approach for online resource allocation problems whereby clients try to be matched to items that arrive one at a time and that consume a limited amount of resources upon allocation. We develop a hybrid method combining stochastic optimization and online optimization to obtain a good and robust allocation.

We propose two applications of this algorithm. First, we present the online auctions problem (Google Adword): an operator sells at auction items to buyers with a limited budget and the goal is to maximize the revenue the operator. We provide extensive computational results with the proposed algorithm.

Secondly, we propose an application for a cancer treatment facility for radiation. The effective management of this center depends mainly on optimizing the use of the linear accelerators. We schedule patients on these machines taking into account their priority for treatment, the maximum waiting time before the first treatment, and the treatment duration. We use information on the future arrivals of patients to provide an accurate picture of the expected utilization of resources. Results based on real data show that our method outperforms the policies typically used in treatment centers.

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VENDREDI / FRIDAY

17 janvier 2014, à 12h
January 17th, 2014, at 12:00

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Pizza et boisson gazeuse fournies
Pizza and soft drink offered

Inscription obligatoire :
Required registration:

<http://doodle.com/tzsnem8ctw9bvkr3>

