

BUSINESS DISTINGUISHED SCHOLAR SEMINAR SERIES

Dynamic Assignment Problem: Hardness Results, Approximability and Algorithms with Applications

Inspired by an application that involves matching sets of care providers with high risk patients, we formulate a variant of the generalized assignment problem (GAP) to model this matching. We refer to as the dynamic assignment problem. In general, it is known that the GAP of this variant is APX-HARD. For specific and useful cases of the problem, such as the one in question we present the first set hardness results. We then show “easy” to use approximation schemes with a constant guarantee that performs very well in practical settings. Inspired by these schemes, we propose a very practical heuristic whose empirical performance on matching caregivers gives near optimal performance.



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Mahesh is the senior associate dean for Research and the Alumni Chair Professor of Stochastic Optimization at the Sauder School of Business, University of British Columbia. His research interests include applications of optimization and mathematical modelling in the areas of cooperative game theory, stochastic inventory theory, health care operations, queueing and approximation algorithms etc. He has served(serves) as an AE for MS, OR, MATH OF OR, and a senior editor in POM and department editor at OR Letters and MSOM. He has won the informs optimization prize, the William skinner prize , Wagner Prize and UBC awards for research excellence in both the senior and junior categories.



Date: 20 June 2023 (Tuesday)

Time: 09:30-11:00am (HK Time)

Venue: Zoom Meeting : <https://lingnan.zoom.us/j/97232398700>
Meeting ID: 972 3239 8700

Language: English



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Due date: 21 June, 2023