A Sequential Model for Recruitment: High Volume, Random Yields, and Rigid Target

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Venue: LAU-14-222
Date: 27 October 2022 (Thursday)
Time: 11:00 - 12: 30

Abstract:

We model a multi-phase and high-volume recruitment process as a large-scale dynamic program. The success of the process is measured by a reward, which is the total assessment score of accepted candidates minus the penalty cost of the number of accepted candidates in the end deviating from a preset hiring target. For a recruiter, two questions are important: How many offers should be made in each phase, and how many phases should there be?

We consider an upper bound, which is obtained when the information about all candidates is available at the beginning, and a lower bound, which is obtained when the recruiter sets the number of offers to make in each phase before assessing candidates. We show that when the volume (i.e., arrival rate of candidates and the target) is large, the upper bound, the lower bound, and the optimal policy all converge to the same limit. Motivated by the convergence results, we design four easily computable heuristics which are all asymptotically optimal when the volume is large. With simple yet effective heuristics in hand, we can compute the number of offers to make in each phase and examine the impact of the number of phases in the process on the reward.

We apply our modeling framework and heuristics to the recruitment process of graduate students in a business program. Our counterfactual analysis shows that the outcome of the process can be improved by up to 5.5%, if our model recommendations are adopted. Our study is the first to model a high-volume recruitment process as a dynamic program and test it in a case study.

Biography:

Professor Qing Li is a Professor of Operations Management at the HKUST Business School and the Academic Director for MSc in Global Operations (MSGO) program. His current research projects include: high volume recruitment, land-based salmon production and harvesting, and new media. He received his degrees from the University of British Columbia, Fudan University and Tsinghua University.

Your attendance is most welcome!

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