How can traditional AI improve search and matching? Evidence from 59 million personalized job recommendations

Abstract:

We explore how Artificial Intelligence can be leveraged to help frictional markets to clear. We design a collaborative-filtering machine-learning job recommender system that uses job seekers' click history to generate relevant personalized job recommendations. We deploy it at scale on the largest online job board in Sweden, and design a clustered two-sided randomized experiment to evaluate its impact on job search and labor-market outcomes. Combining platform data with unemployment and employment registers, we find that treated job seekers are more likely to click and apply to recommended jobs, and have 0.6\% higher employment within the 6 months following first exposure to recommendations. At the job-worker pair level, we document that recommending a vacancy to a job seeker increases the probability to work at this workplace by 5\%. Leveraging the two-sided vacancy-worker randomization or the market-level randomization, we find limited congestion effects. We find that employment effects are larger for workers that are less-educated, unemployed, and have initially a large geographic scope of search, for jobs that are attached to several jobs, and are relatively older. Results also suggest that recommendations expanding the occupational scope yield higher effects.

This paper is joint work with Lena Hensvik and Roland Rathelot

Thomas Le Barbanchon
Associate Professor at Bocconi University