When Does Targeted Advertising Backfire?

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When Does Targeted Advertising Backfire?

Abstract

It is commonly assumed that platforms and advertisers benefit from higher targeting accuracy. Yet we show that improving accuracy can reduce revenue and welfare even when we abstract away from external forces such as privacy concerns, advertising fatigue, product-market and auction competition, or targeting costs. We study a one-shot model where a platform sells ad slot through auctions and advertisers bid based on the predicted type assigned to each consumer. Higher accuracy changes both how many consumers are correctly classified and how misclassified consumers are redistributed across types. When the reallocation makes labelled groups more even, it lowers the dispersion of advertisers' valuations, reduces the likelihood of high bids, and cut auction revenue, though targeting is more accurate. Objectives that focus solely on accuracy, such as cross-entropy loss, may expose platforms to avoidable losses; we argue they should track within-label heterogeneity, for example Gini impurity.

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