Bid Shading Is Covering for Inefficient Programmatic Algorithms

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As programmatic advertising has increasingly become the norm for brands, both SSPs and DSPs have added more tools for helping marketers price bids. Recently, bid shading has become a popular method for helping marketers save money by setting bid prices in first-price auctions. What bid shading does is use an algorithm to automatically tweak the marketers' bid price lower based on historical data that considers exchange, the size of the ad and the site that the ad would be featured on, etc.

Sounds great, right?

Unfortunately, bid shading is only a Band-Aid that makes buyers feel better about not addressing the real challenge of developing efficient programmatic bidding strategies.

Bid shading has become popular because of the industrywide shift from second-price auctions to first-price auctions. In a second-price auction, the highest bidder wins the auction but pays only the second-highest bid. In a first-price auction, the winner does not get this benefit; they pay exactly what they bid. The shift to first-price auctions caused marketers to see their costs suddenly increase.

Bid shading was invented to appease disgruntled marketers. By helping them adjust their bids for each request, bid shading helps mitigate the massive cost increases associated with

first-price auctions.

So what’s the problem?

The problem is that bid shading covers up a more systemic issue: Most programmatic algorithms are poorly designed and suboptimal. First-price auctions helped reveal this problem by exacerbating it, but bid shading is not the right solution.

The reality is that any efficient programmatic buying algorithm has to consider the expected cost of the inventory *before* deciding to bid on it. If your algorithm does not consider the expected win price before bidding, as with bid shading, then fundamentally your algorithm is suboptimal.

To understand why, consider a situation in which two pieces of inventory are both equally likely to incrementally drive a conversion if you win them. The difference between the two pieces of inventory is that one can be accurately predicted to cost twice as much as the other. An intelligent algorithm would choose to bid on the cheaper inventory first and only bid on the second if the budget is sufficient, given the inventory forecast. On the other hand, an algorithm that does not consider the expected win price would value these two pieces of inventory equally, and therefore ultimately spend the budget on inferior inventory.

To put this another way, bid shading allows buyers to price only requests that they would already have bid on. Bid shading is looking to find the right price for an impression, not the right impression. So, for brands, using bid shading does not make your ad more likely to reach the target audience, nor does it increase the likelihood of converting a customer. At most, it might help you save money on advertising costs—but if that money is going toward reaching the wrong people anyway, that does not make it much of a comfort.

Another issue with bid shading is that it inherently lacks transparency, which makes it difficult for buyers to know if

they are being charged a fair price and leaves them open to fraud and mismanagement. And, as agency Hearts & Science notes, “no single party in the programmatic supply chain sees all bids,” which affects the ability of DSPs and SSPs to set fair prices for impressions.

First-price auctions are soon going to the standard; if this is news to you, then you are in real trouble. For this reason, the industry’s reliance on bid shading is likely only to increase.

This will leave open an opportunity for those willing to invest in algorithms and machine learning. Machine learning (and particularly deep learning) is a necessary tool for effectively bidding in first-price auctions. Artificial intelligence is capable of dynamically bidding differently for each impression depending on its likelihood of influencing behavior and its likely cost. It also has the ability to find potential customers who might previously have been overlooked. Not only does this reduce the amount of money wasted on bids that are too high, but it also ensures that brands are spending their money in the right places.

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