Abstract: In Bayesian auction design, it is assumed that the distributions of the players’ values are common knowledge to the seller and the players—the common prior assumption. A lot of effort has been made by economists and computer scientists trying to remove this assumption: when the seller observes independent samples from the distributions before the auction begins, when each player knows all the distributions but the seller knows nothing, etc. In this work, we consider the general information setting where the knowledge is arbitrarily distributed among the players and the seller. Each one of them individually knows some or none of the value distributions, and there is no constraint about who knows which. In such an unstructured information setting, we design mechanisms that generate approximately optimal revenue by crowdsourcing the players’ and the seller’s individual knowledge.

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