



BA/MA:

## Buyers-First Decentralized Auctions

Online shopping has taken over the retail industry almost entirely<sup>1</sup>, while big companies seem to get the best out of it: a lot of customers and control over the prices. Can we design a mechanism that prioritizes the buyers' interests?

In game theory, researchers have considered the so-called *double auctions*, that is, “a process of buying and selling goods when potential buyers submit their bids and potential sellers simultaneously submit their ask prices to an auctioneer, and then an auctioneer chooses some price that clears the market.”<sup>2</sup> However, double auctions heavily depend on a single coordinator, the auctioneer.



Our aim is to design a decentralized double auction that incorporates some desirable game-theoretic properties (e.g. truthfulness, economic efficiency, etc.). To this end, we will employ game-theoretic analysis and, at the same time, distributed ledger technology and various cryptographic tools.

**Requirements:** A general interest in game theory and blockchain technology is an advantage.

**Interested? Please contact us for more details!**

### Contacts

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<sup>1</sup><https://www.economist.com/special-report/2017/10/26/stores-are-being-hit-by-online-retailing>

<sup>2</sup>[https://en.wikipedia.org/wiki/Double\\_auction](https://en.wikipedia.org/wiki/Double_auction)