

Optimal Stopping with Interdependent Values

Wednesday, September 25, 2024 4:15 PM (45 minutes)

Consider a single-item auction, say for a piece of art, where buyers arrive online. The goal is to sell the item to the agent with the highest value, while making the decisions about whether to select each buyer immediately on their arrival. Additionally, buyers' values can depend on one another: a buyer interested in decorating their living room might be influenced by the impression of those arriving before him, and spontaneously attribute a higher value to the item if it is very popular. A buyer that sees the item as a pure investment, on the other hand, will be interested in its resale value alone, which is fully determined only after the arrival of the very last buyer. We analyze settings of the above type, formally, of online selection processes with interdependent values. This means, we combine concepts from the areas of online selection/optimal stopping with those from the theory on interdependent values, both of which have raised a lot of recent interest due to their central and important applications in economics.

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