

# Discussion of “Ad Server and Firm Strategies in Contextual Advertising Auctions”

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## A brief summary

- Take Varian (2007) as a starting point
- Endogenize the declining values of ordered ad positions by introducing a search market setting
- The same characterization of firm bidding strategies as in Varian (2007)
- Then examine ad server's incentive to manipulate market primitives (e.g. product relevances, search costs ...)

- A reduced-form approach: consumers follow an exogenous stopping rule
- It is simple, but needs more justifications
  - e.g., given uniform price, why should a consumer who finds out  $v < p$  continue to stay in the market and keep searching?
  - this affects the calculation of CTR and the value of per click
- About the decreasing value of per click
  - a higher proportion of consumers become  $v < p$  consumers as the search process goes on
  - rely too much on the assumption that  $v < p$  consumers keep searching
  - intuitively, “lower valuation” consumers may search less

- Develop a more “serious” search foundation, or keep it as it is for potential empirical work?
- About the assumption of uniform pricing
  - it can be justified in an extended model with active pricing decision if firms have the same production cost (see, e.g., Chen and He, 2011)
  - but hard to be consistent with heterogenous costs across firms
  - we still lack a model of position auctions with consumer search and (effective) price competition ...

# Ad server's incentive to manipulate primitives

- Perhaps the most interesting part
  - e.g., increasing the match quality of all firms may benefit some firms but harm others; a higher search cost may harm ad server
- But
  - changing market primitives should also affect consumer search behavior and market prices
  - how robust to alternative market settings?
  - rely too much on numerical examples for a theory paper?

- Where to put this paper?
  - position auctions: Edelman, Ostrovsky, and Schwarz (2007), Varian (2007) ...
  - position auctions with a search foundation: Athey and Ellison (2011), Chen and He (2011)
  - non-random consumer search and price competition: Abatskaya (2007), Armstrong, Vickers and Zhou (2009)
- Clarify the main contribution, especially compared to the existing works on position auctions with consumer search