
AAAI-17 Notification for Paper 2562

AAAI-17 <aaai17@easychair.org>
To: Dengji Zhao <dengji.zhao@gmail.com>

12 November 2016 at 00:03

Dear Dengji Zhao,

We are pleased to inform you that your paper, "Mechanism Design in Social Networks" (2562), has been accepted for presentation at the Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17). The competition was very strong this year, with a record-number 2,590 submissions and only 638 papers accepted, for an acceptance rate of below 25%. Congratulations on your achievement. Attached to this message are the reviews of your submission, which we hope will prove useful in preparing your final paper and presentation.

In order to manage program capacity and maximize interaction and discussion among participants, our technical sessions will comprise a mix of oral and poster presentations. There is no status distinction between these presentation modes: papers were chosen for the conference according to a uniform standard of technical contribution. Selection of presentation format for accepted papers will be based primarily on an assessment of breadth of interest, and the construction of balanced and topically coherent sessions. We will notify you about your oral or poster designation once we have assembled an initial program schedule.

All accepted papers will be published in the proceedings in an identical format (7 pages plus up to two optional added purchased pages), grouped together by subject area. We will send detailed instructions for preparing your paper for publication in a separate message in the next few days. In the meantime, please begin revising and reformatting your paper according to the AAAI style files available in the AAAI-17 Author Kit (<http://www.aaai.org/Publications/Templates/AuthorKit17.zip>).

Every AAAI-17 submission received at least two (and 99% at least three) reviews, provided by over 1300 members of the program committee (all PhD researchers with extensive AI publication experience) as well as additional auxiliary reviewers under supervision of PC members. The review process for each paper was overseen by one of 168 senior program committee members or special track co-chairs, who monitored the reviews of the papers and initiated discussion after the author feedback period. Reviewers read and discussed the author response, and in many cases additional reviews were collected. Discussions were often very detailed and, in most cases, led to resolution of issues brought up by the reviewers. For the main technical track, senior program committee members wrote a meta-review summarizing the recommendation and providing further explanation where required. Finally, the program co-chairs and track chairs decided the papers to include in the program.

Acceptance of your submission reflects our confidence that your paper will enhance the AAAI-17 technical program. Whereas the program committee expended tremendous effort in an attempt to be as accurate as possible, we recognize that the conference reviewing process is inherently limited. Evaluation is subject to random and subjective factors, so no doubt some reviewer comments are spurious (and some decisions could have justifiably gone the other way). Nevertheless, we urge you to take very seriously the guidance of reviews and metareviews in preparing the final version of the paper.

At least one author is required to register for the conference and attend to present the paper; we encourage all authors to attend if possible. In addition to the outstanding technical program, AAAI-17 continues the tradition of a series of prominent invited speakers and panels, an extensive demo program, state-of-the-field presentations by senior members of the AAAI community, a "What's Hot" track highlighting the best work from sister conferences and competitions, and other special events. For more details on all AAAI-17 events, please see <http://www.aaai.org/Conferences/AAAI/aaai17.php>.

We look forward to seeing you in San Francisco.

Sincerely,

Satinder Singh and Shaul Markovitch
AAAI-17 Program Co-Chairs

----- REVIEW 1 -----

PAPER: 2562

TITLE: Mechanism Design in Social Networks

AUTHORS: Bin Li, Dong Hao, Dengji Zhao and Tao Zhou

Significance: 2 (modest or incremental contribution)

Soundness: 3 (correct)

Scholarship: 3 (excellent coverage of related work)

Clarity: 2 (more or less readable)

Breadth of Interest: 3 (some interest beyond specialty area)

SUMMARY RATING: 2 (++)

----- Summarize the Main Contribution of the Paper -----

The paper discusses an auction design problem defined on top of a social environment. Basically, the seller wants to sell an indivisible object and can communicate with her neighbours only. Each node in the network participates to the auction when she receives the information from some of her neighbours. Interestingly, she can not only decide the price to be announced to the buyer, but also select among her neighbours those to which information about the auction has to be propagated. Within this settings, two mechanisms are proposed and their properties are studied.

----- Comments for the Authors -----

The specific auction design problem studied by the authors is rather interesting. Though it slightly departs from earlier works in the literature, it introduces some peculiarities that might stimulate further work.

From the technical viewpoint, the paper presents two basic contribution. The first one concerns a very simple extension of the classical VCG mechanisms. In fact, I would even hardly say that this is an "extension". Basically, it is a VCG mechanism directly applied on the specific setting at hand. Results are hardly surprising and overall they appear to be routine.

The second result is the discussion of a different mechanism, which is incentive compatible and also budget balanced. The mechanism exploits more closely the peculiarity of information diffusion and founds on the concept of critical node in the diffusion process. The analysis is interesting.

Overall the paper is well-written, and I generally liked the contribution.

----- REVIEW 2 -----

PAPER: 2562

TITLE: Mechanism Design in Social Networks

AUTHORS: Bin Li, Dong Hao, Dengji Zhao and Tao Zhou

Significance: 3 (substantial, novel contribution)

Soundness: 2 (minor inconsistencies or small fixable errors)

Scholarship: 3 (excellent coverage of related work)

Clarity: 2 (more or less readable)

Breadth of Interest: 3 (some interest beyond specialty area)

SUMMARY RATING: 1 (+ (weak accept))

----- Summarize the Main Contribution of the Paper -----

The paper extends classic mechanism design protocols to information diffusion in social networks. It shows a mechanism that has desirable properties also with respect to spread of information.

----- Comments for the Authors -----

This paper has a very interesting take of mechanism design, I really liked and agree with the motivational part. It is definitely a research line that is worth pursuing further by and beyond this community.

As for the paper, the results seem solid, as far as I could check, and interesting.

However I have to say this paper contains a huge number of typos and ambiguous formal notation, that makes me not very confident about the nature of the results.

The linguistic ones ("Auction has", "our contributions are threefold", "we summary this work", "report a valuation 15", "charges each participate the social welfare" "given a buyer i of truthful allocation" etc...) show that the paper has not been read appropriately before submission.

Some of them are easy to correct, some of the are less easy to correct.

The non linguistic ones though are the ones that worry me the most.

For instance consider the definition of utility of i under the allocation $\pi_i(\mathbf{a}_i)$, one of the main definitions. One can see that a_i is occurring on the left side of the equation but not in the right side. There is clearly something wrong here, which is taken up later on.

Again, I have an idea of how to fix this but it might not be the right one.

With some further reconstruction, I was able to get through the mechanism of information diffusion and the results, which I, overall, liked.

However I would have appreciated a more solid part on which to build upon, at present there is a lot of polishing work to do and I'm, again, not extremely confident about the results.

Also, I recommend the authors to illustrate and motivate their proposed mechanism much more in depth, providing more intuition besides the technical definition.

I also don't particularly agree with calling "truthful" a strategy of maximal information + true value revelation. I'd say it's an optimal for the buyer strategy. But that minimal information + true value revelation is a manipulation, I disagree.

All in all, I feel the paper needs a lot of extra polishing before being publishable.

Although I like the results, the amount of inaccuracy present is lowering my level of confidence in them.

----- REVIEW 3 -----

PAPER: 2562

TITLE: Mechanism Design in Social Networks

AUTHORS: Bin Li, Dong Hao, Dengji Zhao and Tao Zhou

Significance: 3 (substantial, novel contribution)

Soundness: 3 (correct)

Scholarship: 2 (relevant literature cited but could expand)

Clarity: 3 (crystal clear)

Breadth of Interest: 3 (some interest beyond specialty area)

SUMMARY RATING: 4 (++++)

----- Summarize the Main Contribution of the Paper -----

In this paper authors introduce a novel mechanism which allows a seller to sell her item over a social network. Unlike the auctions considered before where a seller tries to sell her item to some fixed group of buyers, in this model it is assumed that the seller has direct links to some people in a large network. Buyers have private valuations for the item, which the seller wants to know. Moreover, buyers should also propagate the information about this auction. Therefore, buyers should report their valuations and their neighbors in the network. Authors resolve this two-fold issue by an original mechanism. I read the paper and checked the proofs, I think they are correct and not very difficult for the reader after the mechanism is clear, but the mechanism itself deserves appreciation from the theoretical point of view.

----- Comments for the Authors -----

I have the following small issues for the authors:

1. Authors do not comment what happens if there are multiple maximum valuations, I think all the proofs remain correct if arbitrary tie-break rule is assumed, but there should be some clarification in the paper.
2. Page 3, typo in paragraph 2, "participate = participant".
3. Page 4, proof of proposition "of any" = "any of".
4. Page 4, last paragraph 1 of "foundation"-s should be deleted.

----- METAREVIEW -----

PAPER: 2562

TITLE: Mechanism Design in Social Networks

All reviewers appreciated the interesting extension of the mechanism design problem to consider diffusion on social networks. The paper presents interesting and non-trivial contribution from a mechanism design perspective, and this work may well stimulate considerable further research.

The one significant concern was the quality of exposition, which included many typos. It seems to me that the issues are minor and can be addressed with a careful revision, and the author response raises my confidence that

there will be a significant effort to improve the quality of writing in the camera-ready version.