

Prof. Jian Pei,  
Editor-in-Chief,  
IEEE Transactions on Knowledge and Data Engineering

Dear Prof. Pei,

Attached please find a revised version of our submission to TIEEEE Transactions on Knowledge and Data Engineering, *Extending Conditional Dependencies with Built-in Predicates*.

The paper has been substantially revised according to the referees' comments. In particular, (1) we have added and discussed five new references in the related work, including the four papers mentioned by Referee 1, and (2) we have further tested a new algorithm (Transit Node Routing, TNR) and a new dataset (the co-authorship network, DBLP) in the experimental study, and (3) we have also taken this opportunity to rewrite several parts of the paper to improve the presentation.

We would like to thank all the referees for their thorough reading of our paper and for their valuable comments.

Below please find our responses to the comments by the referees.

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#### Response to the comments of Referee 1.

**[R1C1]** *An important problem in dependency theory is implication axioms. The paper does not mention this. I guess the reason could be that the axioms are the same as those for CFDs. Even so, I would like to see a discussion on this somewhere around Sec4.2.*

These papers have been cited and incorporated into the related work, and we have also added more details on how these techniques are complementary to our work (page 2, item (2) in the related work). Thanks!

**[R1C2]** *Please check  $t_1, t_2$ , and  $t$  before Example 8 on Page 9.*

We have changed all  $t$  to  $t_1$  in bullet (1). Thanks for spotting this out!

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#### Response to the comments of Referee 2.

**[R2C1]** *1. The techniques in Sec 5 are not easy to follow. A paragraph before Sec 5.1 explaining the basic idea would help.*

**[R2C2]** *2. Figure 6(a): Why does the running time of  $CFD^pS$  fluctuate when  $20 \leq |I_1| \leq 40$ ?*

**[R2C3]** *3. Figures 9, 10, and 11: The gaps between  $CFD^pS$  ( $CIND^pS$  and  $CFD^pS + CIND^pS$ ) and their counterparts are more significant on DBLP than on HOSP. Could you please explain the reason?*

**[R2Minor]** *Line 48, col 2, page 3: (b)  $t[A]$  op a if  $tpi[A]$  is 'op a' -¿ 'op a'?*

*Para 3, col 2, page 11: All the " $CFD^p$ " in this paragraph should be " $CIND^p$ "?*

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#### Response to the comments of Referee 3.

**[R2Minor]** *Defining a wild car symbol as the underscore ( $\_$ ) was a little confusing. A more logical choice for a wild card would be one that is often used in regular expressions, such as an asterisk ( $*$ )*

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Your sincerely,

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