

October 6, 2016

Prof. David S. Rosenblum

Editor-in-Chief

ACM Transactions on Software Engineering and Methodology

Dear Professor Rosenblum,

I would like to submit our paper “Global and Local Deadlock Freedom in BIP”, by Paul C Attie, Saddek Bensalem, Marius Bozga, Mohamad Jaber, Joseph Sifakis, and Fadi A Zaraket, for consideration for publication in ACM TOSEM. The paper presents a sound and complete criterion for deadlock-freedom in concurrent programs with local non-determinism. Completeness is obtained by treating the wait-for graph as an AND-OR graph. In the positive case of deadlock freedom, the criterion can often be verified quickly, given a fast method for verifying deadlock-freedom.

I would also like to submit this paper as a “journal first” submission. A very preliminary version of this paper appeared in the 2013 IFIP Joint International Conference on Formal Techniques for Distributed Systems (33rd FORTE / 15th FMOODS), with the title “An Abstract Framework for Deadlock Prevention in BIP”. The conference version gives a restricted “linear” version of the criterion, which is *not* complete, and which fails in cases where the complete AND-OR criterion succeeds. We also provide experiments that are new and different from the conference version, and which, among other results, give an example where the linear criterion fails while the AND-OR criterion succeeds. Hence the contributions of this paper are different, and extend the conference paper in new ways.

Sincerely,

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