CoCo 2020 Participant: CSI 1.2.4

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CSI is an automatic tool for (dis)proving confluence and related properties of first-order term rewrite systems (TRSs). It has been in development since 2010. Its name is derived from the Confluence of the rivers Sill and Inn in Innsbruck. The tool is available from

http://cl-informatik.uibk.ac.at/software/csi

under a LGPLv3 license. A detailed description of CSI can be found in [3]. Some of the implemented techniques are described in [1, 2, 4]. Compared to last year's version, CSI 1.2.4 contains an implementation of the upside-parallel-closure criterion for confluence by Oyamaguchi and Ohta [5]. Additionally some minor changes to the strategy have been made.

CSI participates in the following CoCo 2020 categories: CPF-TRS, NFP, SRS, TRS, UNC, and UNR.

References

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[3] J. Nagele, B. Felgenhauer, and A. Middeldorp. CSI: New Evidence – A Progress Report. In *Proc. 26th International Conference on Automated Deduction*, volume 10395 of *Lecture Notes in Artificial Intelligence*, pages 385–397, 2017. doi: 10.1007/978-3-319-63046-5_24.

[4] H. Zankl. Challenges in Automation of Rewriting. Habilitation thesis, University of Innsbruck, 2014.

[5] M. Oyamaguchi and Y. Ohta. A New Parallel Closed Condition for Church-Rosser of Left-Linear Term Rewriting Systems. In *Proc. 8th International Conference on Rewriting Techniques and Applications*, volume 1232 of *Lecture Notes in Computer Science*, pages 187–201, 1997. doi: 10.1007/3-540-62950-5_70