

Hakusan 0.13: A Confluence Tool

Fuyuki Kawano, Hiroka Hondo, Nao Hirokawa, and Kiraku Shintani

JAIST, Japan
hirokawa@jaist.ac.jp, s.kiraku@gmail.com

Hakusan is a confluence tool for left-linear term rewrite systems (TRSs). It analyzes confluence by successive application of *rule removal* criteria [3, 4, 8] based on rule labeling [7, 10], critical pair systems [2], and the generalization of Knuth and Bendix' criterion by Klein and Hirokawa [5]. Non-confluence is shown by tree automata techniques as **CSI** does [6]. Except for the generalization of Knuth and Bendix' criterion, **Hakusan** can produce proof certificates verifiable by **CeTA** [9], see [1]. The tool is available at the following website:

<https://www.jaist.ac.jp/project/saigawa/>

Note that this version is essentially the same as the version that participated in CoCo 2025.

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