Formalising Completeness of AC-unification

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Abstract

Unification has several applications in computer science and mathematics: logic programming, theorem proving, type inference and so on. In this talk we revisit the problem of AC-unification, i.e., unification in the presence of associative-commutative function symbols. We talk about why this problem is harder than standard unification and give an example that illustrates Stickel and Fages' first-order AC-unification algorithm. Then, we discuss an interesting step of a structured proof of the algorithm completeness. To conclude, we discuss work in progress in formalising AC-unification in PVS as a first step to extend our work on nominal C-unification. This is joint work with Mauricio Ayala-Rincón, Maribel Fernández and Daniele Nantes-Sobrinho.

References

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