

ON TWO KINDS OF HIGHER-ORDER MODEL CHECKING AND HIGHER-ORDER PROGRAM VERIFICATION

NAOKI KOBAYASHI

Department of Computer Science
Graduate School of Information Science and Technology
The University of Tokyo
email: koba@is.s.u-tokyo.ac.jp

ABSTRACT. There are two kinds of higher-order extensions of model checking: HORS model checking and HFL model checking. HORS model checking is concerned about whether the tree generated by a kind of higher-order rewriting system called a higher-order recursion scheme (HORS) satisfies a given regular property; unlike in the case of general term rewriting systems, the model checking problem for HORS is decidable. HFL model checking is concerned about whether a finite system satisfies a property described by higher-order fixpoint logic, which is also decidable. After reviewing the notions of HORS/HFL model checking, I will summarize the recent results on the relationship between HORS/HFL model checking and applications to higher-order program verification.