Answer Set Programming in a Nutshell

- Invited Talk -

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Abstract

Answer Set Programming (ASP) has emerged in the recent years as a powerful paradigm for declarative problem solving, which has its roots in knowledge representation and non-monotonic logic programming. Similar to SAT solving, the basic idea is to encode solutions to a problem in the models of a non-monotonic logic program, which can be computed by reasoning engines off the shelf. ASP is particularly well-suited for modeling and solving problems which involve common sense reasoning or transitive closure, and has been fruitfully applied to a growing range of applications. Among the latter are also problems in testing and verfication, for which efficient core fragments of ASP that embrace Datalog haven been exploited. This talk gives a brief introduction to ASP, covering the basic concepts, some of its properties and features, and solvers. It further addresses some applications in the context of verification and recent developments in ASP, which bring evaluation closer to other formalisms and logics.