

Teaching ASP (and Its Users) to Share Code: Abstract (Invited Talk)

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Abstract

Answer Set Programming (ASP) is a robust and expressive tool for modeling and solving combinatorial problems. However, it lacks essential features for modularity, reuse, and testing. These are features that modern developers, especially newcomers, increasingly expect. Without built-in mechanisms for isolation or encapsulation, sharing ASP code often means copying and pasting entire programs, understanding every detail, and manually checking for compatibility.

This talk presents a new approach to code reuse in logic programming through ASP templates, now integrated into the ASP Chef platform. Templates provide a lightweight yet powerful way to encapsulate common reasoning patterns, with support for parameterization, inline documentation, and guided instantiation. With templates, developers can write once and reuse confidently.

ASP Chef enables: (1) Templates with global predicates that can be renamed and local predicates that remain hidden; (2) Embedded documentation with interactive instantiation; and, (3), Template expansion for rapid prototyping and debugging.

In the final part of the talk, I will introduce a new mechanism for integrating ASP with third-party frameworks. Instead of relying on fragile mappings defined through sets of facts, ASP Chef now supports Mustache templates that transform answer sets directly into structured JSON configuration objects. This approach offers a practical, maintainable, and intuitive way to connect ASP with external systems, using ASP queries to drive configuration generation.

Keywords

Answer Set Programming, Logic Programming Tools, Modularity, Code Reuse

Declaration on Generative AI

During the preparation of this work, the authors used ChatGPT-4o for grammar and spelling check. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.