

An Indian-Australian research partnership

Scalable and Efficient Semantic Reasoning for Mobile Services

Project number: IMURA0081

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Research Academy theme/s

List only the research academy theme/s that is relevant to the project

1. Advanced computational engineering, simulation and manufacture

The research problem

With the emergence of high-end smart phones/PDAs as well as the phenomenal growth in mobile phones, there is an emerging opportunity for delivering novel mobile/pervasive services. These include mobile social networking services or ad-hoc/dynamic service discovery. The key to enhancing the discovery and delivery of such services is to leverage semantic reasoning to underpin the discovery process. The challenge of applying sophisticated semantic reasoning in applications such as real-time, mobile services is the computational overhead and the scalability issue of today's reasoners.

Project aims

Many semantic reasoning engines such as Pellet, Racer, Fact++ use the well-known Tableaux algorithm as their underlying core. This project will focus on developing scalable, efficient, and optimised techniques for semantic reasoning. The typical strategies will focus on adaptation to context in performing "near" optimal service discovery to meet the real-time constraints in the mobile services domain.

Expected outcomes

The development of novel and scalable semantic reasoning algorithms to enable real-time mobile service discovery.

Which of the above Theme does this project address?

Advanced computational engineering, simulation and manufacture