Adaptive Loose Coupling Intelligent Rule System (ALCIRS)

Thesis Group Meeting #3
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Outline

- Motivation
- Problem specification
- Proposed solution
- ALCIRS
  - Framework
  - Adaptability – rule adding
  - Loose coupling – rule dependency
  - Intelligence – rule learning, reasoning
  - Intelligence – rule generating
Motivation

- Desire to departing from monotonically increasing Knowledge Base (KB) in Variable-Centered Intelligent Rule System – VCIRS (Irfan; 2005, 2006, 2007)
- Creatively produce new categories and interpretation (Indurkhya, 1997)
- Flexibility in representing and problem solving as in Blackboard Systems – BS (Erman at al., 1980; Corkill, 1991)
- Contextual ontology (Benslimane et al., 2006) for rule semantic understanding
Problem specification

- Maintaining KB in **monotonically increasing** fashion and manually rule meaning interpretation
- **Manually** producing new rules with less creativity
- **Tight coupling** in updating rules
- Framework needed for **flexible representing contextual knowledge** and problem solving
- **Specific framework** for building **contextual ontology**
Proposed solution

- Non-monotonic increasing KB along with easier comprehending its rules meaning
- Able to produce creative and vivid rules (semi) automatically
- Presenting loose coupling approach in updating rules for alleviating the rule redundancy
- Featuring the flexible representing contextual knowledge and problem solving
- Contextual ontology building is facilitated
Measuring Framework:
- Ability to tackle 3 issues: adaptability, loose coupling, intelligence
Measuring Adaptability:

- How easy/flexible a rule is updated giving a context as time passes?
Loose coupling - rule dependency

- Measuring Loose Coupling:
  - How many part/component of the rules is involved in updating rule?

Guidance: What parts in CRB will be affected ← alleviating rule dependency problem
Intelligence - rule learning, reasoning

- Measuring Intelligence:
  - What kind of features the system able to present from learning and reasoning process?
Measuring Rule Generating:

- What kind of rule can be generated?
- Is it have equal proper meaning with the existing one?
- Is it creative enough so that the new rule is an interesting one?
Future work

- Continue reading the literatures related
- Continue exploring & exploiting the issues came up
References


