CALL CENTRE KNOWLEDGE ACQUISITION AND DECISION SUPPORT PROTOTYPE

CONFERENCE ON DATA MINING AND DATA WAREHOUSES

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The paper

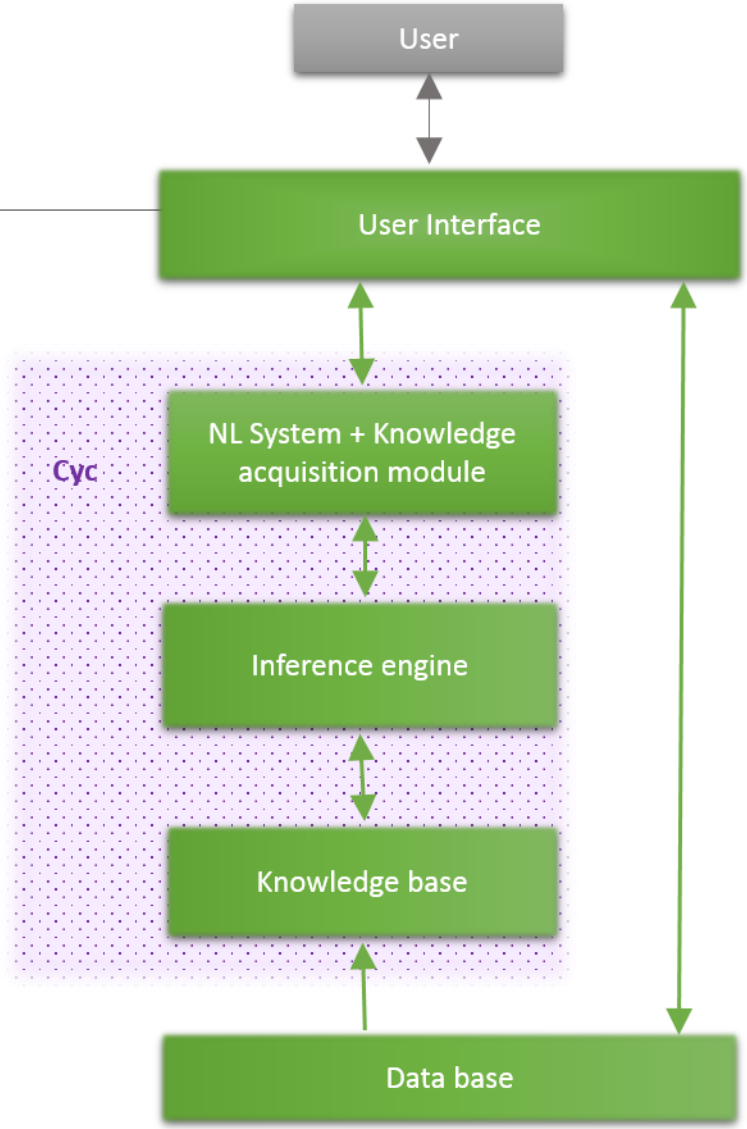
- An approach to knowledge acquisition and computer reasoning support in a call center environment
- Expert System (ES) that is able to assist less technically versed operators
- An inference engine and knowledge-based system that uses ontology driven natural language (NL) dialogs.

Objectives

- Fuel consumption optimization
- Interactions between a certain car part malfunction and severity of car fault
- Construction of an ES that will efficiently obtain the most relevant information and based on newly acquired knowledge find a solution
- Designing appropriate knowledge acquisition rules

Implementation

- Using Cyc AI Environment
- Cyc KB attempts to assemble a comprehensive ontology and knowledge base of everyday common sense knowledge, with the goal of enabling AI applications to perform human-like reasoning.
- KA module enables adding new knowledge to KB
- Natural language understanding and generation
- Rule based approach



Ontology

```
Direction: Forward.

In Mt: AMZSMt.

f: (implies

(and

   (malfunctionTypeAffectsSit ?SIT RoadVehicle VehicleIgnitionMalfunction)

   (situationBeforeEvent ?SIT ConsumerElectronicDevice Device-On)

   (stateOfDeviceTypeInSituation ?SIT ChargingSystemIndicatorLight Device-On))

(and

   (stuffNeeded ?SIT RoadsideAssisstanceCar)

   (stuffNeeded ?SIT AutomobileBattery).
```

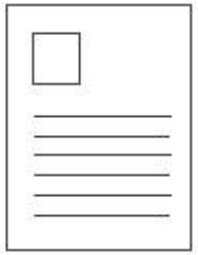
Collection:
AMZSReport

(#$genls #$AMZSReport #$InformationTransferEvent)

(#$isa
#$AMZSIssue123
#$AMZSReport)

Individual:
AMZSIssue#

senderOfInfo
memberWithIDInIssue
issueEventType
dateOfEvent



(#$topicOfInfoTransfer
#$AMZSIssue123
#$InconvenientTrafficEvent123)

Individual:
InconvenientTrafficEvent#

isa (type of event)
objectFoundInLocation
roadVehicleOrientation
confiningRegionOfAnObject
malfunctionAffects
stateOfDeviceInSituation

stuffNeeded
numberOfItems

actualMalfunction

Prototype

- demo

Future work

- Expanding the rules so that the diagnosis can be more exact.
- Extending the KA part.
- Integrating knowledge based on statistical analysis.
- Implementing an extra KA branch that will collect feedbacks.