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“UniOntBot”

**Semantic Natural Language Generation based API
approach for Chatbot Communication**

A dissertation by

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Abstract

A chatbot is a computer program which interacts with users in a textual or auditory method for communication purposes or to provide a service. Such systems are adopted by the organisations to improve their services for the customers/users.

As for the research purposes, a university domain is selected to research as the author's university degree information is small scale. A research conducted by an Australian institution suggested the importance of having a conversation agent for universities and the advantages.

Developing chatbots for smaller scale domains, the lack of data could be an issue with the developer in the text generation process. Typically, chatbot systems use natural language generation techniques to generate the responses after retrieving the raw data from the knowledge base to present understandably to users.

Natural language generation is a subtask of the natural language processing where the machine represents texts in understandable human language. Although there have been various researches carried out for natural language generation since the 1970s, there are only a few available works carried out with semantic technologies compared to linguistic surface oriented structures.

To overcome the addressed problem with text generation, a semantic natural language generation approach can be proposed. This project is named **UniOntBot** stands for university ontology chatbot. The research is carried out for the text generation component of a chatbot. An API based approach with the use of ontologies is proposed by the author to overcome the text generation problem for the small scale domains.

The project provides a low computational cost text generation and can be used for any chatbot framework. The project generates sentences, and the developer has control over the text generation section, and the results of the research were satisfied by the domain and industrial experts. Many pointed out the future enhancements for the project as there is an excellent potential for the project.

Keywords

Natural Language Generation, Semantic Technologies, Ontologies, Knowledge Modelling, Chatbots, Application Programming Interfaces