

Synopsis

The work presented in this proposal describes an approach to solve an actual problem in the conversational systems area: to enable non-experts to design and develop in which the user can establish a spoken dialogue systems. In most of the systems of this type, the specific information relative to the domain, or the specific information that delimits the specific capacities and limitations of the system is embedded within the source code. Due to this, people who want to modify or change actual systems experiment a great number of difficulties, because they must search and investigate in which parts of the source code this information is represented. Nowadays there are some efforts to solve this problem, some of them on the part of private sector companies, and some others by research centers mainly in universities around the world; the objective is to separate the domain specific information from the application, making the creation of new systems easier for people with few or no programming skills. Our proposal was born, when some years ago, in our research laboratory; we tried to part from an existing conversational system to modify it, first to make it work in Spanish language, then to change the domain of the dialogue. However these efforts did not bear satisfying results because the specific information for the tasks that were carried out was in several different parts of the source code, in different programming languages. The idea of the creation of a conversational system framework where the task specific information could be separated from the source code was born, and this idea was approved in 2003 by a committee conformed by UDLAP researchers and external participants, Dr. Luis Villaseñor from INOEP and Dr. Wayne Ward from the Center for Spoken Language Research of University of Colorado at Boulder.

Our proposal consists of the creation of a new module that deals with all the aspects relative to the specific information of every task and instance of a dialogue system. This task specific information is specified in text files with XML format that are loaded first by this module, that scans and analyzes them, looking for errors, validating these archives against its respective document type definition (DTD) file. Next a consistency check is made to make sure that these configuration files keep the consistency with others according to the type of information handled. Once the information and its format is validated, this module instructs the rest of the modules in charge of the dialogue (DM, TTS, NLG, NLP, ASR, etc.) how to carry out all interaction in the dialogue system, where they can find the data which they require. The proposal presents the complete architecture of the system,

together with a Graphical User Interface by means of which, a user with few or null programming skills will be able to specify a task describing all the elements a conversational system requires.

The main contributions of this work are:

- The idea of a conversational system module that verifies and manages all the task specific information in a conversational system
- A GUI to allow non-expert users to create his/her own conversational system guided step by step in a simple web based interface.

This work has been published in:

- “An approach to separate the Task-Specific-Information from the source code in Galaxy Based Conversational Systems”
D. Perez, , I. Kirschning,
WSEAS Transactions on Communications, Issue 1, Volume 3,
January 2004.
- “TLATOA COMMUNICATOR:
A framework to create Task-Independent Conversational Systems”
D. Perez, I. Kirschning
CISSE 2009 Volume 2: Innovations in Computing Sciences and
Software Engineering SCSS, presented on December 16, 2009
(to be published).