

Natural Language: Intelligent Dialogue Management



Natural Language is Grupo INFINITY's pioneering technological platform for natural language processing and intelligent dialogue management

The state-of-the-art Natural Language technology is based in the intellectual capacity of natural language understanding and the ability to control, participation and collaboration all over the dialogue.

Achieve the highest level of selfservice...

- The user can talk and write freely. The system understands, analyzes and creates all the elements representation.
- The user leads and controls the dialogue. He or she can interact by cancelling or substituting previous functions and sentences.
- The system is able to predict forecast and anticipate the natural flow of the dialogue based on isolated data or in a previous dialogue context. The system detects the user's demands and it suits to the user's interaction.
- The technology understands, analyzes and creates all the elements representation using a grammatical analysis strategy, assuring the right interpretation and management of all the semantic capacity of the natural language.
- The platform offers real-time interaction in massive environments using acute memory management strategies.
- The solution completely adapts to the user profile and previous history dialogues with the aim to customize all interactive processes.

... thanks to the best natural dialogue technology

- The platform overcomes natural language and dialogue management limitations applying different strategies for not only natural language understanding but also for proactive conversation dialogue management based on a deep grammatical and semantic analysis.
- It has a memory management engine completely focused in natural language and sharp algorithms to unify and manipulate the natural language semantic structures.
- The system tackles text and voice natural language applications reusing the same recourses, allowing words analysis in microseconds and guaranteeing total lexical scalability in real massive environments.
- The technology assures efficiency not only in managing the task but also in execution time, not depending in the extension of the sentences. This is possible thanks to the natural language resources compilation using specialized compilers that improve the time of execution more than 50%.
- The platform shows high level of efficiency and reliability in deep grammatical analysis, a feature that almost all the software providers in this market overlooked.

Highest level of selfservice with Natural Language

The main benefit of Natural Language is the generation of a natural, adaptable and flexible dialogue between the system and the user, not being neither a guided conversation nor a predefined interactive menu.

Fields of Application

The highest natural language and dialogue comprehension, together with the quality of the interaction of Natural Language© can be used in text chat as well as in voice conversations, in three main activities:

1. e-commerce platforms, as a virtual assistant, achieving a more natural and tailored level of customer attention.
2. Voice portals and contact centers, replacing traditional IVR and reaching an immediate ROI.
3. Domotic industry that will become one of the biggest technological revolution in the short term.

Technological Advantages

Natural Language technology overcomes two major problems that have not been resolved by other natural language solutions:

1. Linguistics dilemmas, natural language understanding and dialogue management, in which the rest of software providers only applies predefined and packaged systems, not being neither natural nor intelligent.
2. Computational difficulties and real-time interaction in massive exploitation environments, that at this time have only be academically resolved.

Natural Language: A new technological milestone

Technically, Natural Language platform is designed in modules that include the representative models and algorithms required, interfaces for the connectivity with third-vendor systems and external components, precise memory and CPU consumptions, and a exploitation-oriented architecture.

The memory manager engine specialized in natural language processing allows the user to talk or write freely. The system is in charge of understanding, analyzing and creating all the elements representation, using a grammatical analysis strategy, such as grammatical constructions with causative, temporal dependences, elisions, etc. It doesn't work as a simple keyword spotting as almost all the current market solutions.

Natural Language technology relies on a general focus that takes into account:

- A modular design that eases to develop the required representation models and algorithms for each particular project.
- Interfaces to allow connectivity with Data Base Management Systems and other components that are external to the system core.
- Precise memory and CPU consumption thanks to memory share models and multi-threading strategies.
- Exploitation-oriented architecture using load-balance and fail-over.

The seven modules that configure Natural Language are:

- **Organon:** Defines the methodological environment and functional architecture.
- **Lexis:** Is in charge of the natural language lexical processing.
- **Phasis:** Represents and manages the syntactical and grammatical structure.
- **Sema:** Generates the formal representation of the meaning of each grammatical structure.
- **Logos:** Builds a natural, flexible and intelligent dialogue with the user.
- **Derma:** Makes easy the implantation of the platform in different environments.
- **Kynesis:** Is responsible of the platform exploitation, management and administration.