Editorial

Natural Language Processing is a growing field in computer science and engineering, related to both theoretical and applied computational techniques relative to natural language and the use of language knowledge. This issue of the research journal "Polibits" presents four contributions concerning natural language processing. Two of them draw formal models of two categories of knowledge of language: syntax and morphology. The other two papers solve practical computational approaches of language to machine translation and information extraction.

The paper "*Natural Language Syntax Description using Generative Dependency Grammar*" gives a practical solution, based on a Generative Dependency Grammar (GDG), to describe natural language syntax. It also presents the features and what GRAALAN, –declarative computer language in which GDG are implemented– offers.

The paper "*Morpheme based Language Model for Tamil Part-of-Speech Tagging*" presents a POS tagging using a corpus-based approach by formulating a Language Model through morpheme components of words Tamil language. An approach to a language model is also given, in which, in order to estimate the contribution factors, the authors follow generalized iterative scaling technique.

In "*Modeling a Quite Different Machine Translation using Lexical Conceptual Structure*", the author outlines the readability of an Example-Based Machine Translation for any pair of languages by means of the language-independent properties of the lexical conceptual structure (LCS), which is described as a representation of traditional relationships. The author presents LCS-Based Machine Translation from the point of view of a complex adaptive system.

In the paper "*Named Entity Recognition in Hindi using Maximum Entropy and Transliteration*", the authors have explored different features applicable for the Hindi Named entity recognition (NER) task, as well as incorporated some gazetteer lists in the system to increase its performance. A two-phase transliteration methodology is proposed, which is not only applicable for Hindi, but also for other languages.

Additionally, this issue of "Polibits" contains six regular papers addressing research of computer science applied to vision and signal processing, as well as to design of interfaces. In this way, this journal aims at the purpose of spreading the vast discipline of computer science and engineering.

A definition of the simple algorithm for triangulation of the virtual object virtual, as well as an algorithm that allows visualizing of the cutting triangular net and the calculation of the dynamics of the net during the cut are presented in the paper "*Visualización 3D de Deformación y Corte de Objetos Virtuales basada en Descomposición Ortogonal* (*3D visualization of deformation and cut of virtual objects based on orthogonal decomposition*)".

In the paper "*An Extended Video Database Model for Supporting Finer-Grained Multi-Policy and Multi-Level Access Controls*", the authors present a hybrid video database model. They also extend the original hierarchical indexing mechanism to add frames and salient objects at the lowest granularity level in the video tree with the aim to support multi-level access control.

In "*Multiplicador Electrónico para Encoder Incremental* (*Electronic multiplicator for incremental encoder*)", the design and experiments on simulation of the electronic multiplicator for incremental encoders are presented, which purpose is to increment the resolution of the feed back signal using the same encoder.

The term "Distance Object Learning" as a way of learning over a computer network or the Internet about real world entities that are distinguishable from others is used in the paper "*Distance Online Learning and Evaluation Framework*". The Distance Object Learning and Evaluation (DOLE) system concept is presented that uses standards for Learning Object Metadata (LOM), and it is based in part on an earlier version of E-learning Assessment System for Young learners (EASY).

The paper "*Computadoras de Bolsillo como una Alternativa para el Control de Servomotores en Robótica* (*PDA Computers as an Alternative for Servo Motors Control in Robotics*)" proposes an implementation which is related to hardware interface, namely, to the usage of the specialized microcontroller that connects PDA with the servo motor using serial port of the PDA.

In "*Diseño de un Coprocesador Matemático de Precisión Simple usando el Spartan 3E* (*Design of Mathematical Coprocessor of Simple Precision using Spartan 3E*)" the authors show how an implementation of the mathematical coprocessor using VHDL, for its further implementation in FPGA.

Gerardo Sierra
Head of the Group of Linguistic Engineering,
Institute of Engineering,
National Autonomous University of Mexico