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EDITORIAL

LRE journal CNL introduction

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A controlled natural language (CNL) is based on a natural language but includes restrictions on vocabulary, grammar, and/or semantics, in order to reduce or eliminate ambiguity and complexity.

Some CNLs ("human oriented CNLs") are designed to improve communication among humans, especially non-native speakers of the respective natural language. In other cases, the restrictions are intended to make it easier for computers to analyze the language in order to improve computer-aided, semi-automatic, or automatic translations into other languages ("machine translation-oriented CNLs"). A third group of CNLs for knowledge representation is designed to enable reliable automated reasoning on natural language texts. These CNLs have a direct mapping to a formal logic representation, and can improve the accessibility of formal knowledge representations or specifications for people unfamiliar with formal notations.

CNL 2014 was the fourth workshop on controlled natural language, a series of biennial events that bring together a diverse and multi-disciplinary community, ranging from knowledge representation and reasoning, artificial intelligence, machine translation, and human–computer interaction to general linguistics, logic, and communication studies. The workshop addresses approaches to the processing

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of subsets of natural language that have restrictions on vocabulary, grammar, and/or semantics, including what has been called simplified language, plain language, formalized language, processable language, fragments of language, phraseologies, conceptual authoring, language generation, and guided natural language interfaces Over the years, the CNL series has received considerable attention; collectively, the papers of the first three workshops have received more than 300 citations.

CNL 2014 was collocated with COLING 2014, the 25th International Conference on Computational Linguistics, which was organised by the Centre for Global Intelligent Content (CNGL) at the Helix Conference Centre at Dublin City University from 23–29 August 2014. The workshop was hosted by Insight (formerly DERI) at the National University of Ireland in Galway. The two-and-a-half day workshop included seventeen papers, together with presentations from three invited speakers: Marti A. Hearst (University of California, Berkeley) gave a talk on "Exploratory Text Analysis at the Middle Distance"; Aarne Ranta (University of Gothenburg) presented his work on "Embedded Controlled Languages"; and Johan Bos (University of Groningen) gave a presentation on "Controlling Semantics". Accepted peer-reviewed papers and one invited paper from Aarne Ranta were published, as had been done for the previous workshops, in Springer's LNCS series under the title "Controlled Natural Language—4th International Workshop, CNL 2014" (ISBN 978-3-319-10223-8). More information about the event can be found on its website along with a video recording of the entire workshop (http://attempto.ifi.uzh.ch/site/cnl2014/).

As the space in LNCS proceedings is limited, and many of the authors provided interesting details in their talks that were not included at the time of publication, we felt the need for a second volume of extended papers to complement the LNCS proceedings volume. This special issue also gave the authors an opportunity to address the connections among and aspects of their work revealed in the discussions at the workshop.

We are particularly excited about the research content of this special issue, as each manuscript treats a specialized topic within each of the three classes of CNL mentioned above. The papers include high-level accounts of CNLs in the form of a systematic analysis and a review of CNLs in the context of the Semantic Web (Safwat and Davis), as well as a proposed extension of the notion of CNL with visual language elements, such as maps, in the nautical domain (Haralambous et al.). Condamines and Warnier cover both human-oriented CNLs and the design of CNLs in their exposition of a detailed corpus-based approach to CNL construction to support writing guidelines for technical requirements issued by the French National Space Agency (CNES, Centre National d'Études Spatiales). On a more technical and applied level, two papers focus on under-resourced African languages by reporting on achievements in modeling the construction of proper verbs in the Tswana language using the Grammatical Framework (GF) toolkit (Pretorius et al.), and the verbalization of knowledge in isiZulu (Keet and Khumalo). New applications of CNL involve using GF for extraction and generation of a computational multilingual grammars and lexica based on frame semantics (Grūzītis and Dannélls). Logic-inspired CNLs are treated in a paper on a predictive editor and authoring tool for system specifications based on Answer Set Programming (Guy

and Schwitter). Finally, a paper on a system with fully automatic high-quality translations for avalanche warnings addresses the domain of machine translation (Winkler and Kuhn).

We would like to thank the authors for their submissions, the reviewers for their assessments and discussions, and the workshop participants for the lively and productive atmosphere during the event.

More information about past and future activities and initiatives can be found on the community website at http://www.sigcnl.org/.