UNITED INSTITUTE OF INFORMATICS PROBLEMS
OF THE NATIONAL ACADEMY OF SCIENCES OF BELARUS

International Scientific Conference on the Automatic Processing of Natural-Language Electronic Texts "NooJ'2015"

NOOJ 2015

Abstracts

June 11–13, 2015, Minsk, Belarus

Minsk
UIIP NASB
2015

УДК 004.91

International Scientific Conference on the Automatic Processing of Natural-Language Electronic Texts "NooJ'2015" : Abstracts (11–13 June, 2015, Minsk, Belarus). – Minsk : UIIP NASB, 2015. – 80 p.
ISBN 978-985-6744-89-4.

This volume contains the abstracts of the International conference "NooJ 2015". The research presented covers different aspects of natural language processing using NooJ, including formalizing such levels of linguistic phenomena as syllabification, phonemic and prosodic transcription, multiword units and discontinuous expressions, local and structural syntax; transformational syntax and paraphrase generation, semantic analysis and machine translation, etc.

Abstracts are published in the form presented by authors.

У дадзеным зборніку прадстаўлены тэзісы дакладаў Міжнароднай канферэнцыі "NooJ 2015". Разглядаюцца розныя аспекты апрацоўкі натуральнай мовы з выкарыстаннем лінгвістычнага асяроддзя распрацоўкі NooJ, улічваючы фармалізаванне такіх напрамкаў лінгвістычнага аналізу як склададзяленне, фанетычная і прасадычная транскрыпцыі, устойлівыя выразы і дыскрэтныя слоўныя канструкцыі, лакальны і структурны сінтаксісы, трансфармацыйны сінтаксіс і перафразаванне, семантычны аналіз і машынны пераклад і г. д.

Тэзісы друкуюцца ў выглядзе, пададзеным аўтарамі.

Scientific Editors:

DSc in Engineering B.M. Lobanov,
PhD in Engineering Yu.S. Hetsevich

ISBN 978-985-6744-89-4

© United Institute of Informatics Problems of the National Academy of Sciences of Belarus, 2015

TOWARDS BUILDING OSTIS TECHNOLOGY-BASED SEMANTIC NLP APPLICATIONS USING NOOJ

K. Rusetski[1], D. Ilyushchenia[1], K. Nikalaenka[1], S. Lysy[2]

[1] Belarusian State University of Informatics and Radioelectronics, Minsk;
[2] United Institute of Informatics Problems of the NAS of Belarus, Minsk
e-mail: rusetski.k@gmail.com

Nowadays, applied intelligent (knowledge-based) systems are quite complex to operate and usually require fairly deep understanding of artificial intelligence concepts. Natural language interfaces (NLI) aim to simplify those interactions, bring machine closer to human. Furthermore, the NLI is essential for the next generation of educational and training systems [1]. NLI obviously makes substantial use of natural language processing (NLP) technologies. While lexical and syntactical aspects of NLP are fairly well understood today, further research is still needed in its semantical aspects. In this paper, we will have a closer look at semantical side of things, particularly at integrating various NLP software pieces to achieve a better understanding of natural-language user input and a better, more user-friendly, natural-language output from computer system.

The article will cover an approach to integrating NooJ linguistics processor with natural language interface technology of Open Semantic Technology for Intelligent Systems (OSTIS) project. OSTIS project provides common formal and technological base for various traditional and intelligent computer systems to interact and augment each other in useful ways. This approach is based on using unified semantic networks (USNs) [2] that are able to represent a wide range of knowledge, both declarative and programmatic, due to their versatility. USNs are particularly useful in formalizing natural language knowledge in a way that is succinct enough for humans and at the same time is interoperable with whichever OSTIS-based applied intelligent system that is in need for linguistic services. OSTIS-NooJ integration is beneficial for NooJ [3] in that it allows for both efficient representation of NooJ grammars and extending and enhancing NooJ's semantic analysis capabilities. OSTIS project benefits from this integration by using NooJ's powerful syntactic engine, thus further facilitating its natural language interface technology.

References

1. Yeliseyeva, O.E. Component design of intelligent tutoring system to prepare students for centralized testing in a foreign language / O.E. Yeliseyeva, K.V. Rusetski // Open Semantic Technologies for Intelligent Systems (OSTIS-2013); eds. V.V. Golenkov [et al.]. – Minsk : BSUIR, 2013. – P. 511–516.

2. Golenkov, V.V. Graphodynamical models of parallel knowledge processing / V.V. Golenkov, N.A. Guliakina // Open Semantic Technologies for Intelligent Systems (OSTIS-2012); eds. V.V. Golenkov [et al.]. – Minsk : BSUIR, 2012. – P. 23–52.

3. Silberztein, M. Nooj Manual [Electronic resource] / M. Silberztein. – 2014. – Mode of access : http://www.nooj4nlp.net. – Date of access : 07.12.2014.

CONTENTS