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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 фармалізаваўныя такія 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.

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LANGUAGE MODELLING FOR ROBOTS-HUMAN INTERACTION

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This work is the start for further design of language model for robots-human interaction. The goal is to interact with some number of robots in order to make them perform commands. With **NooJ** [1] this model can be designed in much easier way compared to other tools. The idea is to design the language that would be common and close to every-day language of the humans and that it would be able for machines to 'understand' it. Further design will be dedicated to replaying the model that has already been designed and the new data which is the new possible language constructions, phrases, linguistic units, etc. that can be expected from humans in order to interact with machines in their natural way.

At the start stage of the work we use deep syntactic analysis to get the model that is as simple as possible and yet far from underfitting the real model. We will use such concepts as “*Subject*”, “*Action*”, “*Object*” and “*Features*”. Using **NooJ Syntactic Grammar** we design graph model for combining all these concepts and linguistic units that will refer to them. Eventually we perform play-out routine to generate dictionary for robots using **NooJ Dictionary**. Some units from this dictionary will look like:

Робат_Віцебск прынясі лыжку, GUID=R1+Action=take+Object=spoon

Робат_Гродна едзь на_зарадку, GUID=R2+Action=Go+Charge

Робат_Брэст выконвай паварот направа,

GUID=R3+Action=turn+Features=right

Робат_Брэст выконвай паварот налева,

GUID=R3+Action=turn+Features=left

“*Subject*” (GUID in our example) refers to a robot’s name. “*Action*” refers to an action to be performed by robots that is usually represented by a verb. “*Object*” represents a target of the action. And “*Features*” is an add-on to specify “*Object*” or “*Action*”.

Using such kind of concepts, which are natural for humans, and **NooJ** tools we can generate Language Model for robots-human interaction.

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