"Russian computer-assisted language learning and artificial intelligence: automatic morphological analysis and disambiguation"

I present a new approach to Russian computer-assisted language learning that allows students and teachers to automatically generate grammar exercises from online texts. Among major world languages, Russian has relatively rich morphology, and experienced Russian instructors consider morphological complexity to be the most prominent source of difficulty for Russian second language learners (Leaver et al., 2004, p. 126–127). To address this difficulty, computer-assisted language learning tools can be used to deliver mechanical drills, asking learners to supply a particular morphological form when given the base form. Developing such drills is technologically straightforward, since both the task and the answers are well defined. However, more and more empirical studies of language acquisition provide evidence that such mechanical drilling exercises are not always as effective as communicative focus-on-form activities in which the learners focus on target grammatical structures incidental to a real communicative task (Wong and Van Patten, 2003, 2004, and citations therein). In this presentation, I demonstrate free and open-source technology to automatically generate focus-on-form activities from any online Russian text, including news, literature, encyclopedias, etc. Among other things, this technology allows students or teachers to automatically highlight target grammatical structures, or generate multiple-choice and fill-in-the-blank exercises. Individual students can therefore study grammar using up-to-date texts on interesting topics of their own choosing. Target grammar topics include noun declension, verb conjugation, word stress, participles, and verb aspect.

I highlight conceptual issues surrounding both the underlying natural language processing technologies, as well as linguistic considerations of the grammar activity generation. I also showcase a number of use cases to demonstrate the tool's versatility in various applications.