THE FIRST VERSION OF THE GEORGIAN SMART JOURNAL AND ADAPTED WIKIPEDIA

Pkhakadze K., Chikvinidze M., Chichua G., Kurtskhalia D., Malidze Sh.

Abstract. In the paper we overview the trial versions of the Georgian Smart Journal (GSJ) and Adapted Wikipedia (GAW), which are elaborated with the grant support of the Shota Rustaveli National Science Foundation on the AR/122/ 4-105/14 project "One More Step Towards Georgian Talking Self-Developing Intellectual Corpus" [1, 2]. The project, in turn, is subproject of the long-term project "The Technological Alphabet of the Georgian Language" [3, 4] of the Center for Georgian Language Technology of the Georgian Technical University.

Keywords and phrases: Georgian smart journal, Georgian adapted Wikipedia, Technological alphabet of the Georgian language, Georgian intellectual corpus.

AMS subject classification (2000): 03B65, 68T50, 68Q55, 91F20.

1. Introduction

The paper is addressed mainly to the problem of construction adaptive systems for Georgian visually impaired or blind people and, also, to the problem of construction of the talkie Georgian intellectual computer system, in other words, Georgian techno- logical alphabet. For these aims, firstly, the GSJ (glanguage/sp) was constructed and, after, by the same approaches, we have constructed GAW.

The both systems are elaborated on the basis of the Georgian Voice Browser (GVB, see [1 - 2], geoanbani.com/extension) and, also on the basis of the Georgian Smart Paper (GSP, see [3], geoanbani.com/smartPaper). These systems, in turn, are elaborated in confines of the long-term project "The Technological Alphabet of the Georgian Language" [4 - 5].

Thus, on the basis of GVB and GSP and, accordingly, on the basis of built-in Georgian speech synthesizer, Georgian speech recognizer, Georgian text analyzer systems and Georgian hybrid extension of the Google translate, which, in turn, are elaborated within the projects "One More Step Towards Georgian Talking Self-Developing Intellectual Corpus" [6 - 9] and "Foundations of Logical Grammar of Georgian Language and Its Application in Information Technology" [10 - 12], it became possible to construct the GSJ and GAW system, which we have already presented at the conference (see - http://www.viam.science.tsu.ge/old/others/2016/ Konstantine_pkhakadze_eng.pdf).

The construction of adaptive systems for visually impaired or/and blind people is one of the very actively elaborated trends, because of very high social value of this problem. Around 80 such systems, which are working in a different way in different languages are described on the web "Disable

World" (https://www.disabled-world.com/assistivedevices/computer/screen-readers.phpwww.disabled-world.com), the 10 from which are described in more detail at the address http://usabilitygeek.com/10-free-screen-reader-blind-visually-impaired-users/http://usabilitygeek.com. NVDA (http://www.nvaccess.org/) is one of the well-known systems of such type. It is working for 43 languages, including Georgian. But, In contrast to these systems, our systems allow visually impaired or/and blind users to interact with the some part of the Georgian internet space with the help of the Georgian spoken language.

2. Main part

In the paper we overview the first trial versions of the GSJ and GAW. These innovative systems are elaborated in confines of the project "One More Step Towards Georgian Talking Self-Developing Intellectual Corpus" [1, 2]. The project is subproject of the long-term project "The Technological Alphabet of the Georgian Language" [3, 4] of the Center for Georgian Language Technology of the Georgian Technical University.

The trial version of GSJ is equipped with the trial version of Georgian text analyzer system, which allows users to correct orthographically/syntactically the text for publishing in parallel mode of its typing. Also, the Georgian text analyzer system allows users in trial way to correct texts logically and semantically. At the same time the GSJ and GAW are provided with the trial versions of the Georgian speech synthesizer, speech recognizer and voice manager systems and, also, with Georgian many lingual text to text and voice to voice translator systems. Because of above-mentioned the trial versions of GSJ and GAW allow users:

1. To get information by the hearing with the voice commands (see Fig. 1);

2. To produce voice search with the voice commands (see Fig. 2 and 3);

3. To translate already detected Georgian phrase in foreign languages with the voice commands and, also, to produce search in the Google and Wikipedia as on the basis of the already detected Georgian phrase as well as on the basis of its translation versions with the voice commands (see Figure 4, 5, 6, 7, and 8).

Fig. 1.

Comment: The system reads the wiki-paper with the voice command "start reading of paper". As in GAW, as well as in GSJ the reading is regulated with the voice commands.
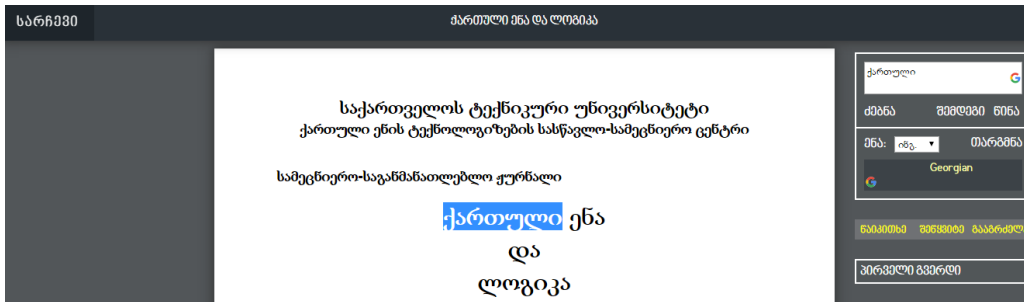

Fig. 2

Fig. 3

Comment: In figure 2/figure 3 you see that the user utters the word "Georgian" (state language) and the GSJ/GAW has searched this word in the paper. Thus, the GSJ/GAW is the first journal/wikipedia, where so-caled voice search procedure is realized.
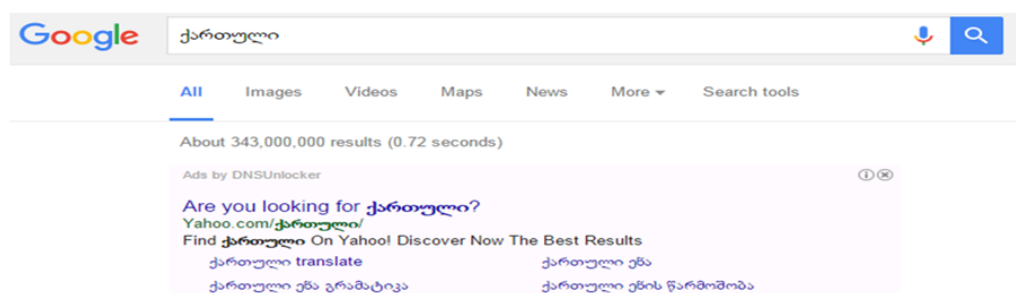

Fig. 4

Comment: The GSJ gives us the results of search, which was produced with the voice command "search in Georgian Google" on the basis of the word "Georgian". A similar search in Georgian wikipedia from the GSJ is realized with the voice command "search in Georgian wikipedia".
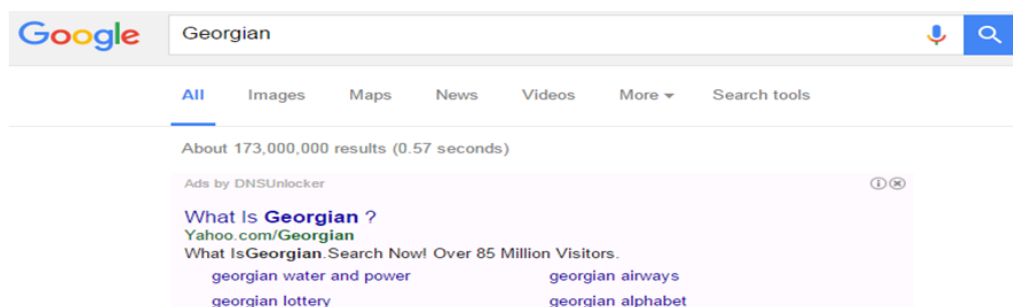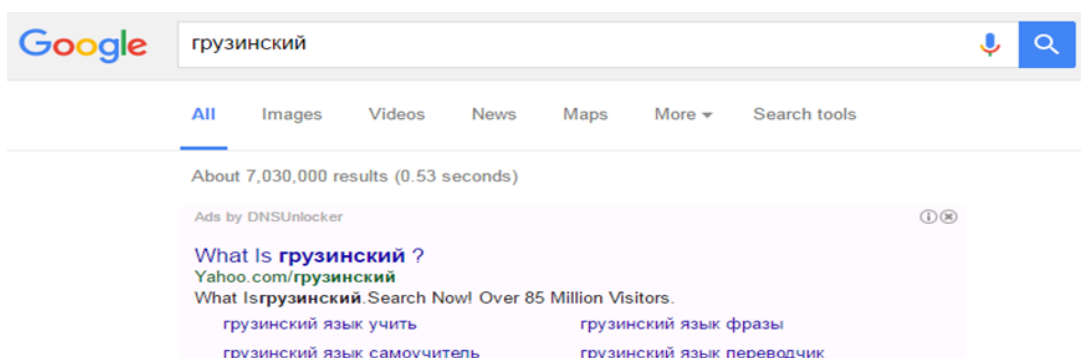
Fig. 5

Fig. 6

Comment: The GSJ gives us the results of search, which was produced with the voice command "search in Google" on the basis of the English (see figure 5)/Russian (see figure 6) translation of the word "Georgian". A similar search in wikipedia from the GSJ is realized with the voice command "search in wikipedia".
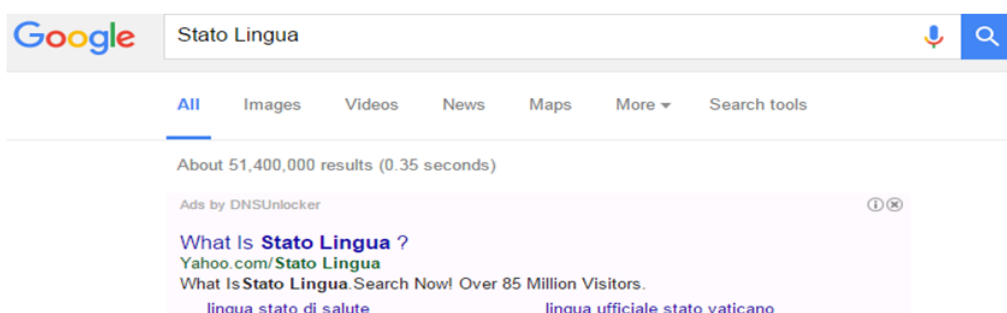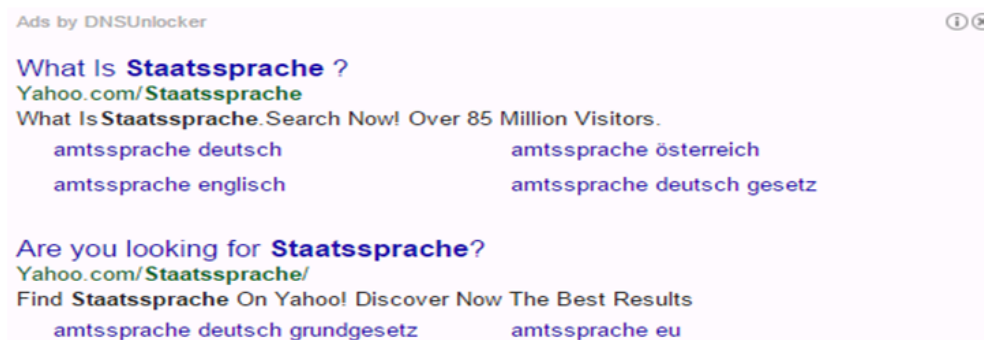

Fig. 7

Fig. 8

Comment: The GAW gives us the results of search, which was produced with the voice command "search in Google" on the basis of the Etalian (see figure 7)/German (see figure 8) translation of the "state language". A similar search in wikipedia from the GAW is realized with the voice command "search in wikipedia".

3. Conclusion

Thus, because of the GSJ is equipped with the trial modes of Georgian text analyzer, speech processing and voice manager systems and, also, with Georgian translator systems, we say, that it is already partially equipped with the Georgian computer brain, ear and throat i.e. with the hearing, speaking, translating and analyzing skills in the Georgian language. At the same time, because of the fact that the GAW is already partially equipped with the same abilities, sometimes we call GAW as "smart" Wikipedia as well.

And finally, it is obvious, that by the similar approaches, which we have already developed for the GSJ and GAW, it becomes possible to adapted in trial mode a more part of the Georgian Enternet space and make it almost completely adapt for the visually impaired or blind people.

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Authors' address:

K. Pkhakadze, M. Chikvinidze, G. Chichua, D. Kurtskhalia, Sh. Malidze
Scientific-Educational Center for Georgian Language Technology
Georgian Technical University
77, M. Kostava str., Tbilisi 0175
Georgia
E-mail: gllc.ge@gmail.com