BrUK Group for Ukrainian NLP

Tools and Data

Team

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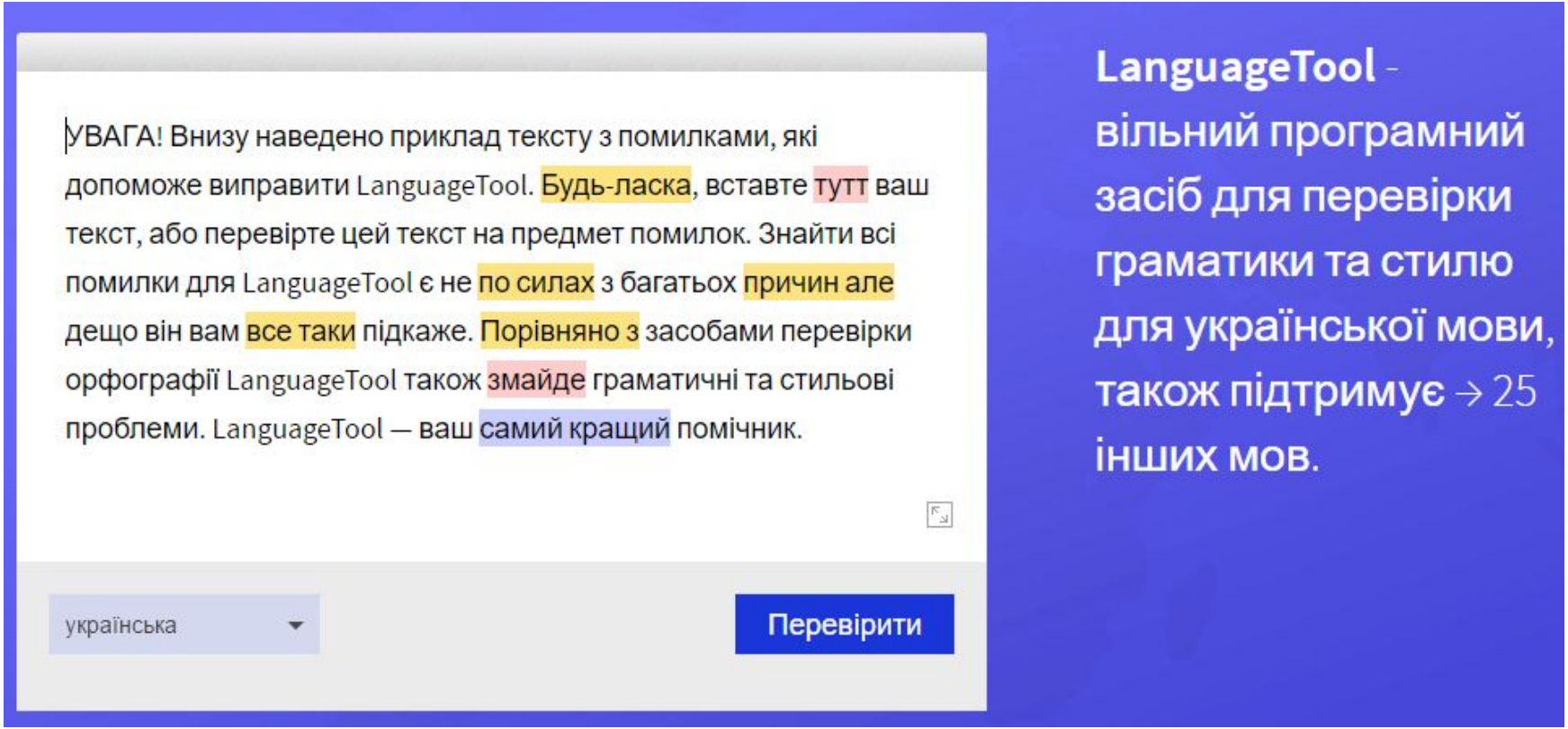
Engineering Manager, **Grammarly, Inc.**

Olga Havura

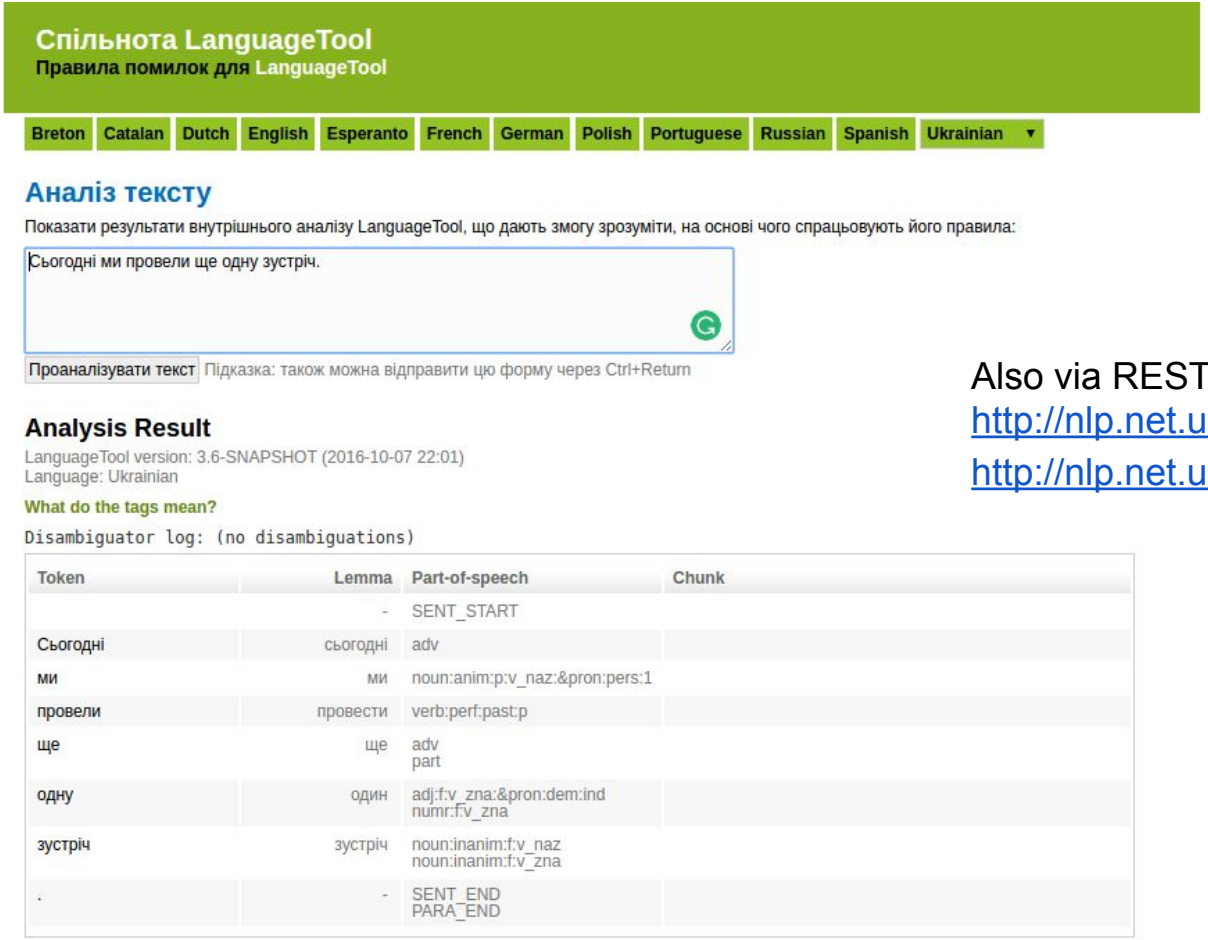
Linguist, PhD

... and many others

LanguageTool for Ukrainian languagetool.org/uk



http://community.languagetool.org/analysis/analyzeText



Also via REST API

http://nlp.net.ua:8787/languagetool/swagger-ui.html

http://nlp.net.ua:8787/dict_uk/swagger-ui.html

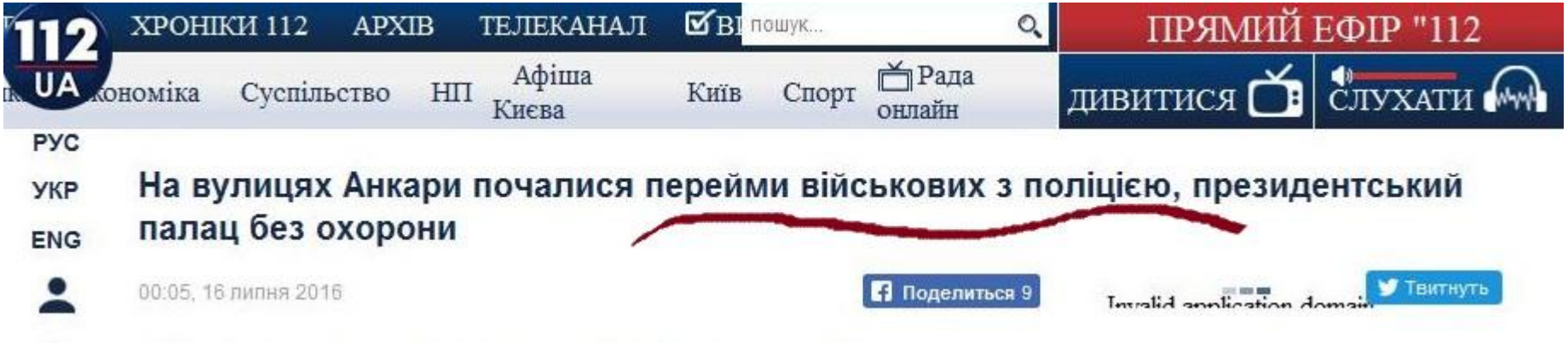
Latest version of LanguageTool 3.5 for Ukrainian

- dictionary with over 208,000 lemmas

  ВЕСУМ: brown-uk/dict_uk

- more than 370 grammar and stylistic rules (work on all wordforms)
- over 2,400 word choice suggestions

Challenge: Machine-translated text



The military and the police went into labor pains in the streets of Ankara ???

Challenge: Disambiguation

Великі дані vs. дані проекти

За даними уряду vs. за даними фактами

База даних vs. у даних умовах

Challenges accepted

- Data acquisition and preparation
- Training Word2Vec for Ukrainian
- Building 2 Random Forest classifiers to:
  - solve the ***дані*** case
  - detect unedited machine-translated texts

Lessons Learned

Given the results obtained on 2.5-mln-token set lemmatized and 300-sentence labeled set per case:

- **Need for data** - a good Ukrainian corpus
- Improved data preprocessing is a must
- Word2Vec works, but there are other options to be explored
- Tokens work, but character-based vectors are well worth considerinmg

Ukrainian Brown Corpus

Create a corpus of modern Ukrainian based on the principles of the Brown Corpus:

- balanced
- annotated
- freely available

Main principles

1. Original (not translated) and edited texts.

2. Created and published within a fairly brief period of time.

3. Texts selected following roughly the classification matrix of the original Brown Corpus.

4. Texts represent a variety of sources, authors, topics, and genres.

BrUK features

- 1 mln tokens
- 9 categories (from newspaper texts to fiction)
- 500+ fragments
- annotated (PoS tags)
- disambiguated (homonyms removed)
- dictionary + tagger

No more surzhik!

“наростаюча паніка”

“несуча стіна”

“відділення" в значенні "відділ"/"відділок"

"вірний" в значенні "правильний"

"постановка" в значенні "постанова" (театральної вистави)

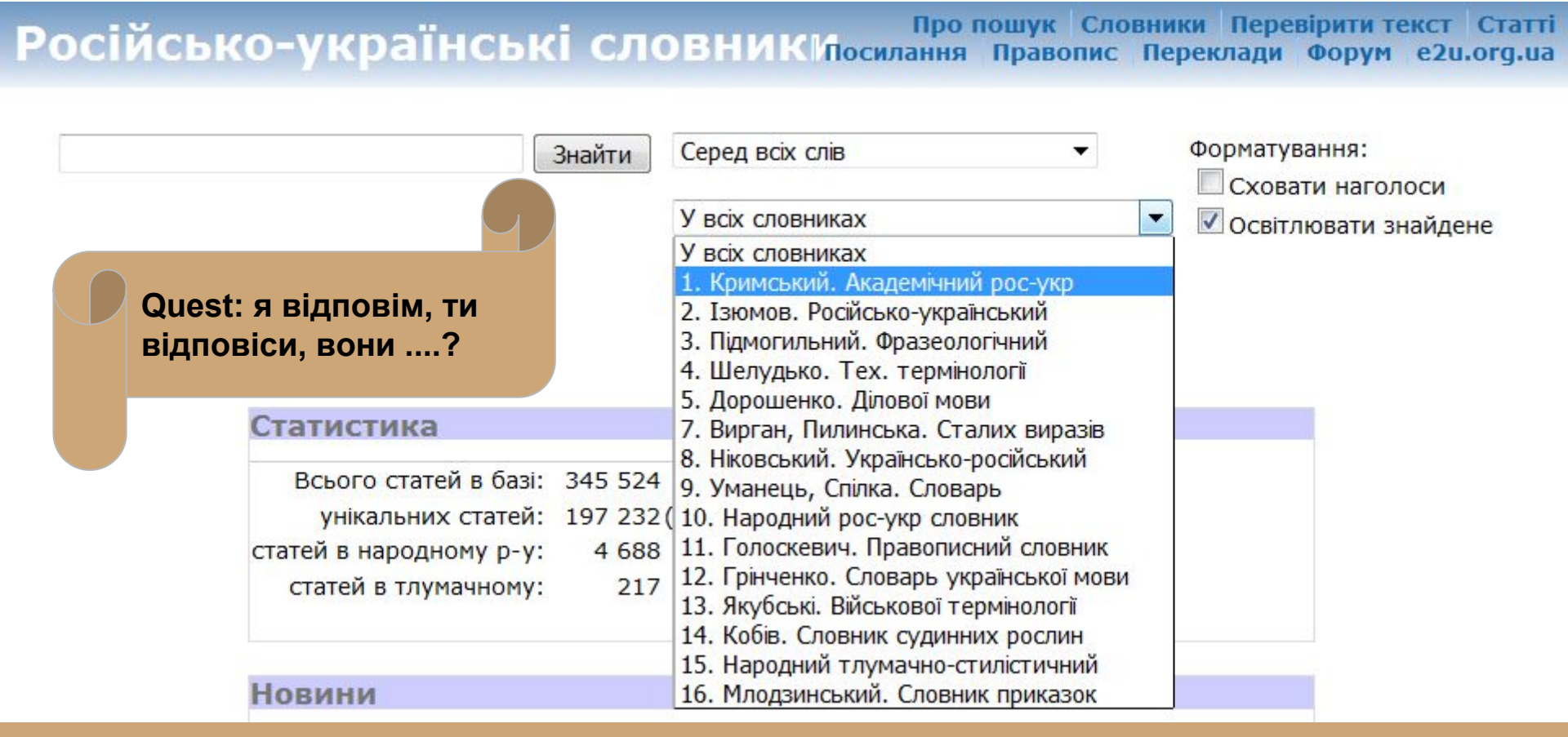
"приналежність" замість "належність"

How about a mobile app for the Ukrainian community to LIKE AND SHARE TEXTS IN GOOD UKRAINIAN?

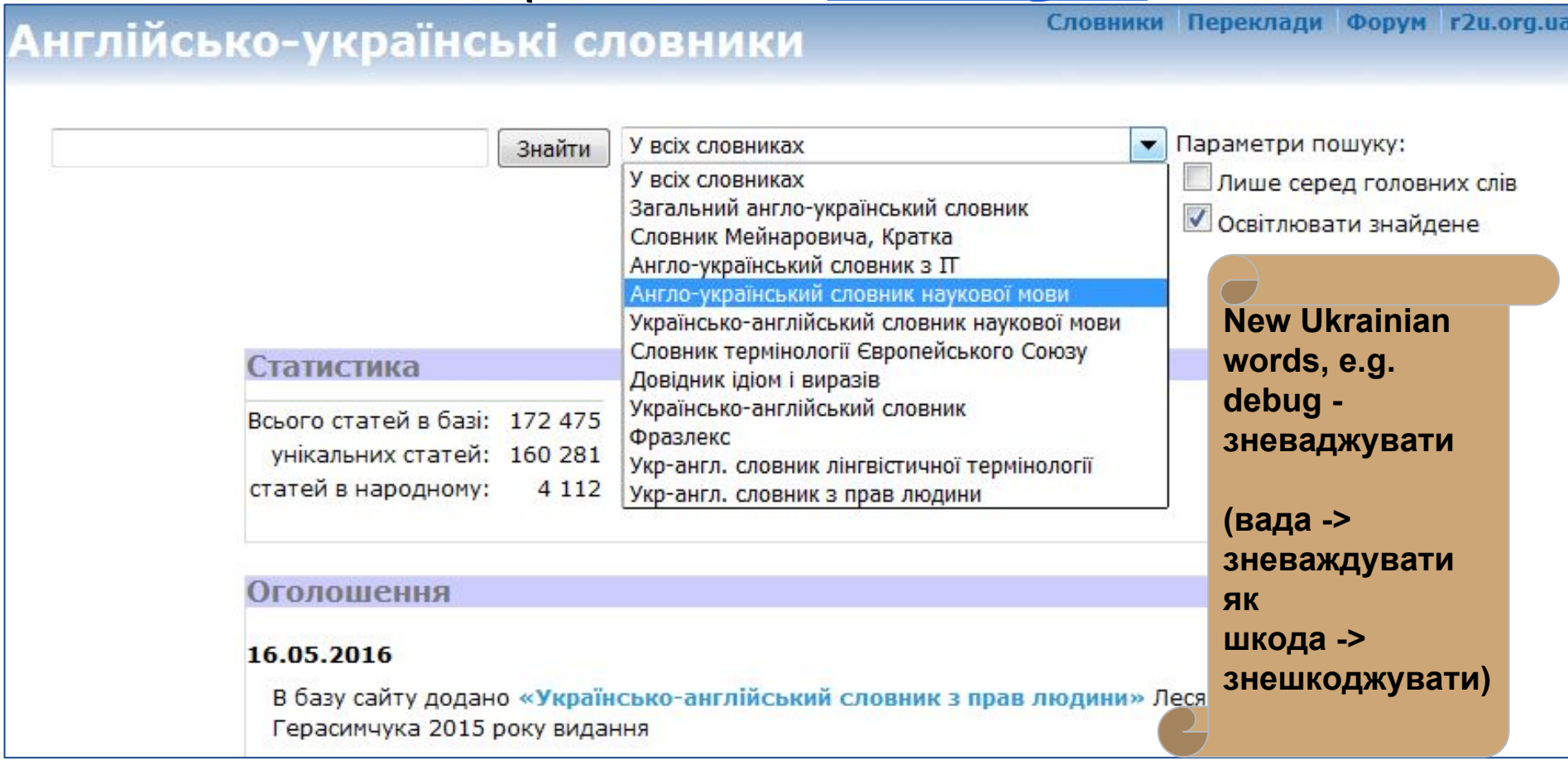
Next steps

- finish collecting texts for BrUK
- annotate the corpus (automatic PoS tagging + manual verification)
- train various ML models (for PoS tagging, semantic similarity detection, error correction, etc.)
- collect bigger general corpora, specialized corpora, etc.

Keep in mind: r2u.org.ua



Keep in mind: e2u.org.ua



Potential users and contributors

- software engineers
- NLP practitioners
- NLP researchers
- ML engineers
- data scientists
- AI specialists
- linguists
- etc.

Eager to join in ?

Contact us via email: bruk.group@gmail.com

GitHub: Brown-uk

nlp_uk

dict_uk

corpus

Find more about us: http://r2u.org.ua/corpus
Facebook: www.facebook.com/r2u.org.ua/

Thank you, you are the best!

Any questions?