QALB: Qatar Arabic Language Bank

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The Problem

Standard Arabic is a language with rich morphology and a complex grammar.

➔ Many Arabic speakers make mistakes when spontaneously writing Arabic.

➔ Arabic output of machine translation has numerous grammar errors.

ياخون ارجو التريث قليل قبل اضافه التعليق: انا ذهبت للحج العام الماضي والله والله لم اراء من الاخوان السعودين الى كل الاحترام والتقدير منذو وصولنا الى المطار حتى غادرنا بلادهم
يا إخوان أرجو التريث قليلا قبل إضافة التعليق: أنا ذهبت إلى الحج العام الماضي. والله والله لم أر من الإخوان السعودين إلا كل الاحترام والتقدير منذ وصولنا إلى المطار وحتى غادرنا بلادهم.

Example of errors in an online comment written by an Arabic speaker

English	Ten farm owners bought twenty-one birds.
MT output	عشرة أصحاب المزارع اشترى واحد وعشرين الطيور. ten owners the-farms bought[sing] one[gen/nom] and-twenty the-birds.
Edit	عشرة أصحاب مزارع اشتروا واحدا وعشرين طيرا. ten owners farms bought[plur] one[acc] and-twenty bird[acc].

Example of errors in English-to-Arabic machine translation

Our challenge: How to fix these errors automatically?

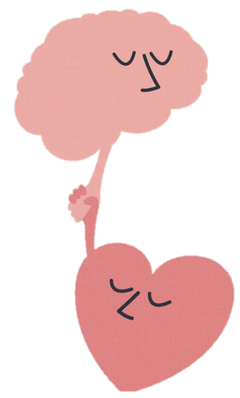
Our Solution

QALB

Qatar Arabic Language Bank

Build a corpus of Arabic language errors with manually annotated corrections.

- Target size is 2 million words. The largest such corpus for Arabic.
- Native Arabic text is primarily Aljazeera comments
- Collected essays of non-native writers
- Machine translation of English Wikipedia pages into Arabic



ACLE

Automatic Correction of Language Errors

Develop models of automatic correction of Arabic language errors using the QALB corpus.

- Unsupervised models for error detection and correction are evaluated against QALB corpus.
- Supervised models of error correction are trained and evaluated using QALB corpus.

Status of the Project (Year 1)

QALB Annotation Guidelines

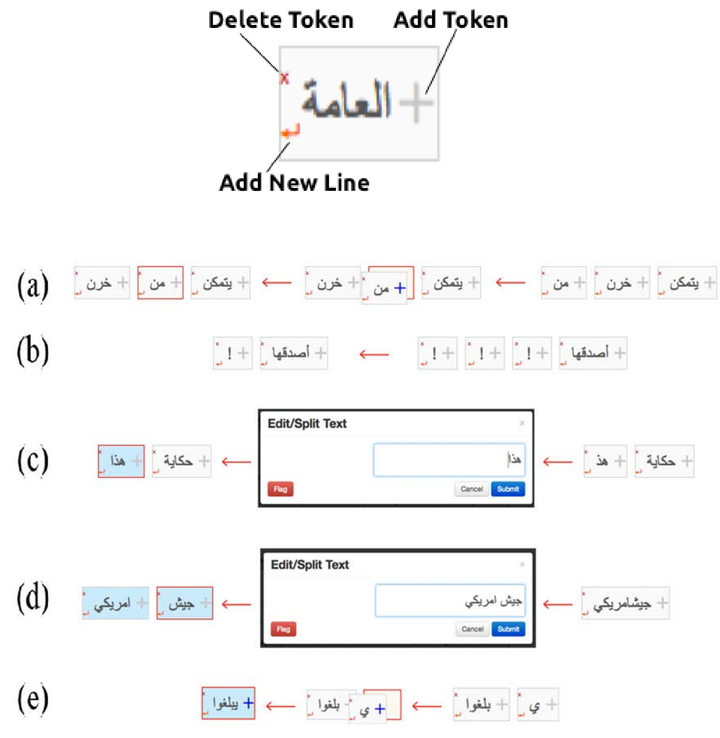
- Comprehensive guidelines covering errors of spelling, punctuation, lexical choice, morphology and syntax.
- A large number of examples to train annotators.

QAWI: QALB Annotation Web Interface

- An intuitive web-based annotation tool
- Easy administration of QALB's large-scale annotations
- Complete record of all annotator actions
- Facilities for evaluating inter-annotator agreement
- Integrated automated annotators: MADA, a system for Morphological Analysis and Disambiguation of Arabic

QALB Annotation

- We have trained a group of eight annotators.
- We have so far annotated 600,000 words.



Editing actions in QAWI

Next Steps

- We plan to reach our annotation goal of 2 million words in a year and a half.
- We started developing supervised ACLE solutions using QALB.
- We will host an international competition on Arabic text correction as part of the Arabic Natural Language Processing Workshop. The workshop is in the conference of Empirical Methods for Natural Language Processing – EMNLP 2014 in Doha.

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