Reviewer's report

Title: A Pipeline To Extract Drug-Adverse Event Pairs From Multiple Data Sources

Version: 2
Date: 25 October 2013

Reviewer: Luca Toldo

Reviewer's report:

Major compulsory revision

1. relation to previous work and to state-of-the-art

The work does not appropriately take into consideration the published literature on the topic of automated detection of adverse drug reactions from text (e.g. PMID: 23935003, 23256479) and on existing corpus of adverse drug reactions (e.g. PMID: 22554702; LREC2010-2nd Workshop on Building and Evaluating Resources for Biomedical Text Mining). Furthermore they also cited only Leaman 2010 paper for analysis of ADR on social media, although the published literature in the field is much larger (e.g. Ahmed Abbassi from Virginia University grant http://news.virginia.edu/content/research-sift-social-media-early-signs-adverse-drug-reactions; the european WEBAE initiative http://www.imi.europa.eu/webfm_send/912). It is essential that the authors reconsider their work in view of all of the above, and provide clear description on how they go beyond/ contribute to state of the art.

2. precision/recall of their tagging technology for adverse drug reactions

The publication that is used as reference for the NER tagging technology (TCS PubMed Explorer) does not provide quantitative measures of the precision/recall for any of the entities involved.

3. Legal implications in webscraping

The authors do not even address the legal implications of web scraping techniques (e.g. use of web-harvest) and particularly on patient / health information. Furthermore they do not elaborate on the EU and USA normatives on the topic.

4. Lack of quantitative benchmark

The authors used the BPCNN algorithm to detect co-occurrence of drug/problem pairs, since their text mining technology is not able to detect relationships (although the TEMIS MER technology is able to do so); however they do not compare their results quantitatively and therefore it is not possible to know the precision/recall of their method.

5. automatic dictionary creation

There is very extensive literature on how to create automatically a dictionary of specific terms: statistical and machine learning methods are commonly adopted.
I wonder the robustness of their patent.

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.