

Automatic Extraction of Harmful Sentence Patterns with Application in Cyberbullying Detection

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Abstract

The problem of humiliating and slandering people through Internet, generally defined as *cyberbullying* (later: CB), has been recently noticed as a serious social problem disturbing mental health of Internet users. In Japan, to deal with the problem, members of Parent-Teacher Association (PTA) perform Internet Patrol – a voluntary work by reading through the whole Web contents to spot cyberbullying entries. To help PTA members we propose a novel method for automatic detection of malicious contents on the Internet. The method is based on a brute force search algorithm-inspired combinatorial approach to language modeling. The method automatically extracts sophisticated sentence patterns and uses them in classification. We tested the method on actual data containing cyberbullying provided by Human Rights Center. The results show our method outperformed previous methods. It is also more efficient as it requires minimal human effort.

Keywords

Cyberbullying detection Natural language processing Pattern extraction

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