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TREO Talk Paper

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Abstract

This research examines the problem of identification and elimination of malicious customer reviews on Amazon.com. Online customer reviews are increasingly considered crowd-sourced consumer opinions that significantly influence online purchasing decisions (Hu, 2012). However, most current approaches to detecting fake reviews rely on either manual assessment of the reviews or the use of the mechanical Amazon Turks service (Mukherjee, 2014; Munzel, 2015). Manual assessment of customer reviews is not scalable in practice, leaving the quality of the current approaches to detect fake reviews questionable. The primary goal of our research is to develop a model of credibility analysis that automatically classifies amazon customer reviews as credible or non-credible. This model is developed based on the Design Science Research Methodology (Peffers, 2007) and encompasses a Recurrent Neural Network (RNN) with Long Short-Term Memory (LSTM) as a classification technique. We first identify features of online customer reviews that can be used to effectively separate credible reviews from non-credible ones. Then fed the review dataset based on identified features to our proposed model for the assessment of review's credibility. The study of existing literature indicates that most of current research on fake review focusses on the content of the reviews (Hu et al., 2012; Munzel, 2015).We, however, believe that content is only part of an effective method for detecting fake reviews. Our proposed model considers not only the textual but also the writing style and user related features of reviews. Further, we will compare our LSTM based model with other algorithms used in detecting misleading information such as Dynamic Series-Time Structure-based Support Vector machine (SVM-DSTS) (Ma, Gao, 2015) and Decision tree ranking (DT-Rank) (Zhao, 2015). Initial Design of proposed model will be presented for this TREO talk and encourage discussion concerning misleading customer reviews, existing fake review elimination initiatives, and Design science as an approach.

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