

Jordan University of Science and Technology

Enhancing Aspect-Based Sentiment Analysis of Arabic Hotels? reviews using morphological, syntactic and semantic features

Authors: Mohammad Al-Smadi, Mahmoud Al-Ayyoub, Yaser Jararweh, OmarQawasmeh

Abstract: This research presents an enhanced approach for Aspect-Based Sentiment Analysis (ABSA) of Hotels? Arabic reviews using supervised machine learning. The proposed approach employs a state-of-the-art research of training a set of classifiers with morphological, syntactic, and semantic features to address the research tasks namely: (a) T1:Aspect Category Identification, (b) T2:Opinion Target Expression (OTE) Extraction, and (c) T3: Sentiment Polarity Identification. Employed classifiers include Na?ve Bayes, Bayes Networks, Decision Tree, K-Nearest Neighbor (KNN), and Support-Vector Machine (SVM).The approach was evaluated using a reference dataset based on Semantic Evaluation 2016 workshop (SemEval-2016: Task-5). Results show that the supervised learning approach outperforms related work evaluated using the same dataset. More precisely, evaluation results show that all classifiers in the proposed approach outperform the baseline approach, and the overall enhancement for the best performing classifier (SVM) is around 53% for T1, around 59% for T2, and around 19% in T3.