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Emotion cause pair extraction of E-commerce customer product reviews

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Abstract

In today's highly competitive e-commerce industry, understanding customers' opinions and sentiments has become essential for businesses to thrive. Customer reviews are an excellent source of feedback for online retailers, providing insights into the strengths and weaknesses of their products and services. However, the abundance of unstructured text data in these reviews makes it difficult for companies to extract meaningful information. One significant challenge is identifying the emotional cause-effect relationships between the product features and customer sentiments expressed in the reviews. Without this information, businesses may struggle to address customers' pain points, improve their products, and enhance their brand reputation. Therefore, the extraction of emotion-cause pairs from customer reviews has become a critical task for e-commerce companies.

To address this problem, natural language processing (NLP) techniques and machine learning algorithms have been developed to automate the extraction of emotion-cause pairs from customer reviews. One approach is to use convolutional neural networks (CNNs) to learn the underlying patterns in the text data. These models are trained on large amounts of labeled data, which enables them to identify complex relationships between words and phrases in the reviews. By using this approach, e-commerce companies can automate the extraction of emotion-cause pairs from customer reviews, allowing them to gain valuable insights into customer sentiments and improve their products and services accordingly. The approach, design, implementation, and evaluation steps are detailed in this report.

Keywords: ECPE, Emotion analysis, Feature extraction, ECP, Text classification, Emotion classification, E2E-ECP, Causal relation extraction

Subject descriptors: Emotion recognition, Customer reviews, E-commerce, Information extraction, Sentiment analysis, Pattern recognition