

## Applying transformers-based NLP models to explore credibility in different product categories in Amazon's online reviews

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### **Abstract**

*Online reviews in the e-commerce and eWOM communities play a key role in consumers' purchase decisions. In this regard, one concern is the growth of fake reviews, which directly targets the credibility of platforms and the trust of users. To address this issue, we apply Transformers-based NLP models to better understand the scope of fake reviews within the Amazon marketplace across different product categories. Our methodology applies two different transformer models to Amazon online reviews for (1) generating fake reviews and (2) classifying online reviews as fake or truthful. This work contributes to the literature on understanding the credibility of online review. Our results show that most of the fake reviews are located in non-verified purchase reviews. Considering the different product categories, we found that the percentage of fake reviews is 3 times higher for the experience products and 8 times higher for the experience products for non-verified purchase reviews with respect to the fake reviews found in verified-purchase reviews.*

**Keywords:** *online reviews; transformers; GPT-2; BERT; credibility; verified purchase*

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