An Efficient, Cost-Effective Methodology for Expedited Marketing Copy Review Leveraging Advancements in NLP

Neel Sirivara

Department of Computer Science, Bellevue College, Bellevue, United States

DOI: https://doi.org/10.51244/IJRSI.2023.1011014

Received: 21 October 2023; Accepted: 01 November 2023; Published: 04 December 2023

ABSTRACT

The rapidly advancing online marketplace necessitates adaptation from sellers and consumers alike. Oftentimes in established markets, sellers without grand funding or an extremely experienced marketing team will struggle despite offering products of equal or greater value than established competitors. This research paper presents a complete methodology, harnessing data mining, AI, and statistical techniques, for inexperienced sellers to augment their marketing copy and produce high-level, competitive marketing content. With the aid of existing materials and research, this paper's proposed model can offer a balancing factor between new and established sellers in the constantly evolving online market.

Keywords: 3rd-party seller, SEO, bag-of-words modelling, marketing copy

INTRODUCTION

With the widespread advent of Asian online marketplace giants in the e-commerce economy, internet shopping has become saturated with sellers promoting near-identical products yet experiencing drastically different levels of success. Existing written guidelines facilitate standardized marketing procedures for big-bill operations. However, there exists an unwarranted discrepancy between established and newer e-commerce sellers hinged on the differential in funds allocated for drafting marketing features and copy. Reaching the level outlined by industry standards without substantive decrease in allocative efficiency poses a real problem to small or new online sellers.

Although the online 3rd-party seller market has become over-burgeoned, the simultaneous rise in natural language processing and heightened efficacy of word importance coefficients in said language processing allows for non-labor-intensive yet effective channel of review for marketing copy. With a GPT-driven approach and user-involved feature adjustment of marketing copy, sellers of common products can better distinguish themselves in both search optimization and consumer engagement. This paper depicts a content review pipeline utilizing recent technologies to further democratize online selling.

METHODOLOGY

The methodology is comprised of steps in a cyclical process.

Initial Write-up: The largest inhibitor of computer-generated test is a lack of emotion, lack of contextualization and depth, and a lack of human familiarity. While this method does not eliminate the writing workload of the copywriter, much less expertise is required in their initial draft.

1. Prior to textual processing, the model's application will harvest examples of succesfull copy in the user's niche for bag-of-words modelling.

Chat-GPT Plug-in: Using the Chat-GPT API, the user's query in an adaptable and streamlined interface will send material for review and receive feedback orientated towards concision and interactivity with the

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume X Issue XI November 2023

customer.

Bag-of-words Recommender: One of the most crucial facets of SEO is the keywords comprising a product title and description. Many sellers falter once entering a market due to failing to meet the baseline keywords needed for engine recommendation. Bag-of-words is an approach to textual data which classifies each word with its frequency of occurrence, yielding data on each word in an unorganized text database. This data can then be transformed into coefficients of relevance for individual words, enhancing the text modelling. Employing a model trained on 3rd-party-seller data to suggest keywords for SEO better ensures success or marketing copy in addition to the more holistic review made by Chat-GPT.

Re-insertion: After adjusting their copy, copywriters may employ this same cycle, receiving a score P ($0<P<1$, where a value of 1 indicates fully optimized content) to continuously improve and evaluate their text until satisfied. Ultimately, writers should maintain a sense of humanity in the content.

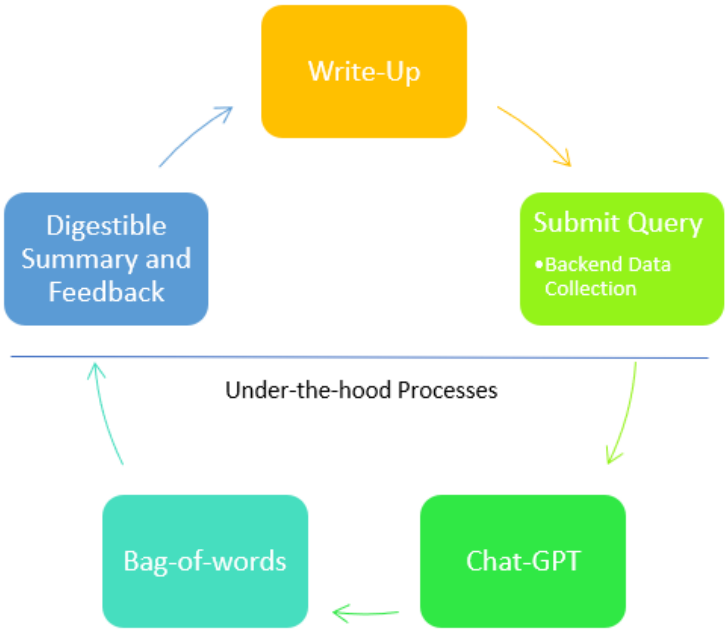

Fig. 1 Content Review Process in User Interface

IMPLEMENTATION

This method leverages several established libraries and technologies in Python. The databases necessary for bag-of-words will be supported by MySQL, and the requests and Beautiful Soup libraries will facilitate web scraping for the construction of such databases. Numpy will support statistical testing and calculation of the P-value for text evaluation based on Chat-GPT feedback and keyword analysis.

Content Management: Relevant features pertain predominantly to the word distribution in the marketing content. Chat-GPT manages desired features with frequency and temperature parameters to dictate the novelty and interest of the text. Bag-of-words modelling helps measure word frequency and importance, making for strong insights about keyword presence with limited analytical complexity.

Set-Up: The primary start-up speed limitation of the application is the requirement of the model to have a pre-prepared text data database for bag-of-word model analysis. Hence, Beautiful Soup will run with each new query for review and compile the top sixty examples from several marketplaces of the requested copy for the given sales niche. This data is ranked by sales volume and collected into a corpus for primarily bag-

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume X Issue XI November 2023

of-words purposes.

Reliability: The strict data modelling techniques employed and thoroughly assessed Chat-GPT output will ensure consistent positive results for users of the model.

LIMITATIONS ON CURRENT MODEL

Feature Space: A more thorough and multidimensional feature space taking tokenization, length, and novel product into account would increase the model's feedback capability at the cost of efficiency and simplicity.

Creativity: There still exists a limitation on the model's efficacy if submitted copy falls beneath a certain quality threshold. Future model variations and technologies may further lower this threshold.

Case Study

An implementation of the proposed model:

The user opens the app interface, with a 300-word product description for an unused iPhone X. The user marks that they require review on said description and the model first utilizes Beautiful Soup to consolidate data and then calls the Open AI Chat-GPT API, inputting the text. The interface then seamlessly organizes the concision and interactivity feedback alongside a revised version of the description should the user choose to adopt it. Simultaneously, the app uses the aforementioned database to inform the user of typical keywords in similar well-performing product listings, complete with a P-score indicating predicted SEO efficacy. The user can effectively utilize the feedback to greatly improve their marketing copy and reevaluate their content until satisfied.

RESULTS AND CONCLUSION

This paper's proposed solution for smaller online sellers engages in a holistic discussion about reinventing marketing copy and presented a novel method for efficient and untapped marketing copy review, utilizing data mining and recently proliferated technologies. This paper presents a methodology rooted in Python data analysis with clear implications in revolutionizing online selling in seemingly saturated markets. Online sellers stand to vastly benefit from this non-intensive, yet potent tool for content review and optimization.

REFERENCES

1. George, A. S., & George, A. H. (2023). A review of Chat GPT AI's impact on several business sectors. Partners Universal International Innovation Journal, 1(1), 9-23.
2. Hu, M., & Liu, B. (2004, August). Mining and summarizing customer reviews. In Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining (pp. 168-177).
3. Qader, W. A., Ameen, M. M., & Ahmed, B. I. (2019, June). An overview of bag of words; importance, implementation, applications, and challenges. In 2019 international engineering conference (IEC) (pp. 200-204). IEEE.
4. Ray, P. P. (2023). Chat GPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. Internet of Things and Cyber-Physical Systems.
5. Sirivara, N. (2023). Marketing Reevaluated: Proposing Computer-assisted Generation of Online Seller Marketing Content.
6. Sugarman, J. (2006). The Ad week copywriting handbook: the ultimate guide to writing powerful advertising and marketing copy from one of America's top copywriters. John Wiley & Sons.