



Instant: Analytical Dashboard for Trending Hashtags on Instagram

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Abstract — Instagram has become one of the most popular social media platforms, and its user base is increasing day by day. With over 1 billion monthly active users, Instagram has become a great source of information and entertainment for people worldwide. The use of hashtags on Instagram has also increased in recent years, making it easier for users to find content related to their interests. So there arises a need to analyse the trending hashtags on Instagram to create content relevant to the target audience. One popular method for analyzing trending hashtags on Instagram is to use third-party tools such as Hootsuite, Sprout Social, or Iconosquare. These tools allow users to track and analyze the performance of specific hashtags over time. We have also tried to make a tool that is readily available to the users. The prior research that has been done in this area is also explored here.

Keywords—Instagram, Python, Flask, Dashboard, Digital Marketing, Social Media

I. INTRODUCTION

With over a billion users worldwide, Instagram is one of the most popular social media platforms. A hashtag is a key component of Instagram, and it is used to categorize posts in order to facilitate discovery by users with an interest in a particular topic. Using Data Science to analyze trending hashtags on Instagram provides insight into user behavior, social trends, and the evolution of popular culture.

This research paper aims to investigate the application of data science to Instagram trending hashtag analysis. We will specifically look at the frequency and popularity of hashtags over time i.e. the trending hashtags. We will utilize sophisticated analytical techniques including machine learning algorithms to analyze the data for our study, which will be based on a sizable dataset of Instagram posts gathered over

many months. The results of this study will have significant implications for businesses, marketers, and social media platforms. By understanding how users engage with hashtags on Instagram and the sentiment associated with different topics, businesses can create more effective marketing campaigns and identify emerging trends.

II. LITERATURE SURVEY

In this section, we summarize some of the existing research works in the field of Social Media Trends Analysis.

- A. In the paper “Local experiences on Instagram: Social media data as source of evidence for experience design”[1], Ms. Marika Gon discusses the importance of local experiences in the tourism industry, and how destinations are competing based on their distinctive local offerings. Design thinking is crucial in

creating these experiences, and user-generated content on social media platforms like Instagram can provide valuable information to guide the design and development of experiences. However, the potential of UGC in experience design remains under-investigated. The paper aims to investigate what and who is associated with 'local' and 'local experience' in both academic literature and the social media environment, using Instagram as the data source for analysis. The research approach is mixed-method, combining quantitative patterns and qualitative analysis.

B. In the paper “Managing Customer Relationships in the Social Media Era: Introducing the Social CRM House”[2], Mr. Edward C. Malthouse et al discusses how the traditional concept of CRM needs to evolve and adapt to the rise of social media. The paper explores the pitfalls and opportunities that arise from the convergence of social media and CRM, and discusses how social media engagement affects different areas of the new "social CRM house." The paper also explores how social media impacts the supporting business areas of the social CRM house, including people, IT, performance evaluation, metrics, and overall marketing strategy. The paper provides insights into how companies can successfully navigate the challenges and opportunities of social CRM.

C. In the paper “Sentiment Analysis of Social Media via Multimodal Feature Fusion”[3], Mr. Kang Zhang et al discusses the increasing importance of multimodal sentiment analysis in understanding people's attitudes and views on events through the analysis of sentiment in multimodal data generated on social media platforms. The article highlights the challenges of multimodal sentiment analysis, such as feature representation and integration of internal and interaction information between modes. The article also describes the limitations of previous studies and proposes a new multimodal sentiment classification model based on a fine-grained attention mechanism. The proposed model uses a denoising autoencoder and an improved variational autoencoder combined with an attention mechanism to extract more accurate text and image features, respectively. The model then fuses the features of different modes through a new multimodal cross-feature fusion model based on the attention

mechanism. The proposed method was tested on two different standard Twitter datasets, and the results showed the superiority and feasibility of the proposed model. The article concludes with a summary and suggestions for future work in multimodal sentiment analysis.

D. In the paper “SMA4TD: A social media analysis methodology for trajectory discovery in large-scale events”[4], Prof. Eugenio Cesario et al present SMA4TD, a methodology for analyzing social media data to discover behavior and mobility patterns of users attending large-scale public events. The methodology involves seven steps, including identifying the events, collecting and preprocessing geotagged data related to the events, identifying users who published the data, and performing data analysis and trajectory mining. The paper presents two case studies where SMA4TD was used to analyze data from the 2014 FIFA World Cup and the EXPO 2015 event in Milan. The analysis yielded results such as the most frequented stadiums during the World Cup, and the most frequently visited pavilions at the EXPO, as well as information on the visitors' countries of origin and destinations after their visit. The results showed a strong correlation between the analysis and official attendee/visitor numbers. The paper concludes with a discussion of related work and future directions.

III. PROBLEM STATEMENT

Digital marketing is a highly competitive field, and having access to real-time trend analytics is essential for marketers to stay ahead of the game. Many websites charge significant fees for trend research, which can be a barrier for smaller businesses and individuals.

By providing an open-source, freely usable trend analysis tool for Instagram, our application can help level the playing field and give marketers and content developers the ability to make data-driven decisions without having to pay for expensive tools. This can lead to better-targeted content, increased reach, and ultimately, better revenue for businesses.

Moreover, our tool can also benefit online activists by giving them insights into the conversations and topics that are most relevant to their causes. By identifying the most popular hashtags and trends related to their causes, activists can increase engagement and awareness for their campaigns.

In summary, by providing an accessible and user-friendly tool for trend analysis on Instagram, we can empower marketers, content creators, and activists to make data-driven decisions and succeed in their endeavors.

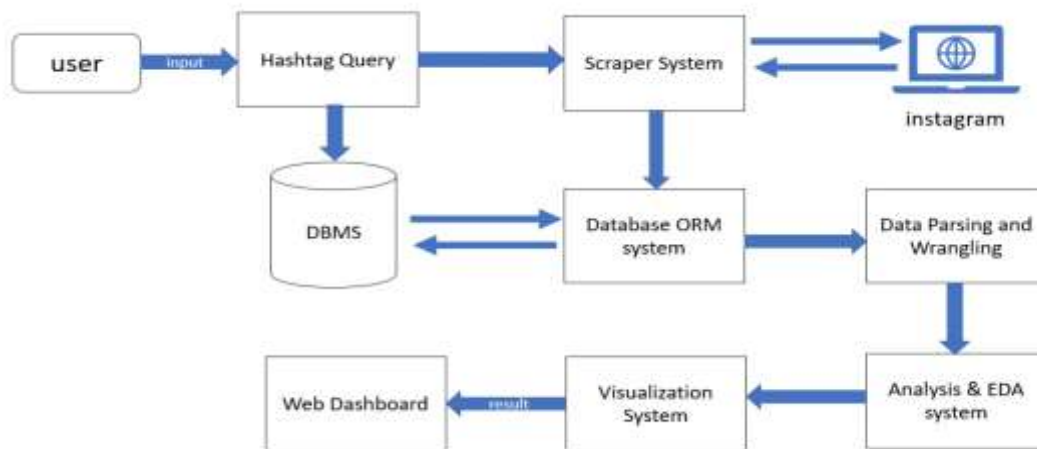


Figure 1: Proposed Block Diagram

IV. PROPOSED METHODOLOGY

Using web scraping with tools like Selenium to gather data from Instagram is an effective way to collect a large amount of data quickly. After collecting the data, processing it with Python libraries like NumPy, Pandas, and Matplotlib allows for data cleaning and visualization, which will help identify trends and patterns in the data.

Flask is an excellent choice for creating the dashboard because it is a lightweight and flexible web framework that allows for the creation of web applications quickly and easily. Flask is also well-suited for data science projects because it provides a straightforward way to create RESTful APIs that can be used to interact with the data.

By combining these various tools and technologies, we can develop a robust and effective solution for analyzing and visualizing Instagram hashtag trends. The project's methodology is solid and should lead to the development of a useful tool for monitoring and analyzing Instagram trends in real-time.

V. RESULT ANALYSIS

Creating a dashboard using Python and Flask is an excellent way to display real-time Instagram hashtag trends and provide users with valuable insights. With this dashboard, users can enter their search queries and view the results in real-time. This will enable them to monitor the latest Instagram trends and stay up-to-date with the latest topics and conversations.

By displaying information such as the number of posts associated with a particular hashtag and the engagement rate, users can gain insights into the popularity and engagement levels of different hashtags. This information can be used to inform social media strategy and help marketers identify the hashtags that are most relevant to their target audience.

Moreover, the dashboard can also allow users to view historical data trends for specific hashtags, enabling them to track the performance of specific hashtags over time. This can be useful in identifying long-term trends and patterns in Instagram usage.

Overall, creating a dashboard to display real-time Instagram hashtag trends is an excellent way to use data science to gain valuable insights into social media behavior. By leveraging the power of Python and

Flask, this dashboard can provide users with the information they need to stay informed and make informed decisions about their social media strategy.

Figure 2 provides a clear and concise visualization of the most popular hashtags on Instagram. The interactive dashboard allows users to easily explore and analyze the data based on their preferences. The use of filters and sorting techniques allows for a dynamic and customizable user experience.

Additionally, the inclusion of a bar graph provides a visual representation of the trending hashtags, making it easier for users to identify which hashtags are currently popular. This can help users stay up-to-date on the latest trends and tailor their social media strategies accordingly.

Overall, the figure is an effective tool for analyzing and understanding the trends and patterns of Instagram hashtags.

FIGURES AND TABLES

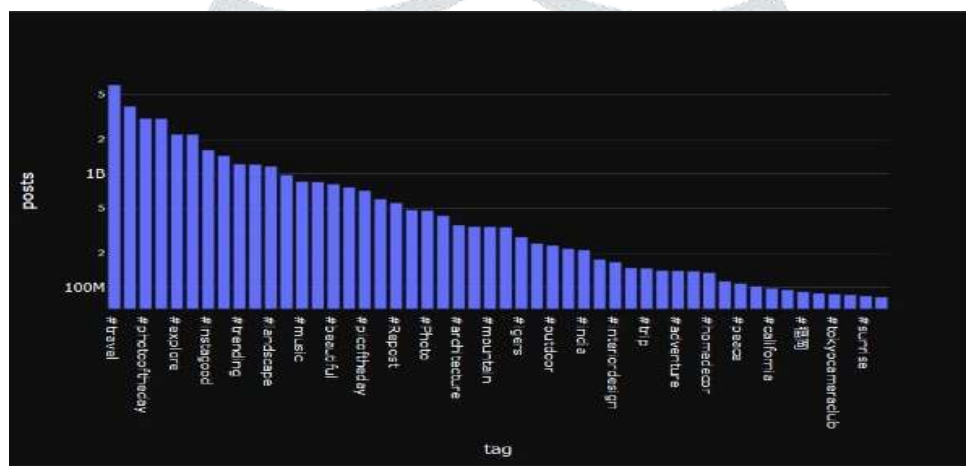


Figure 2: A Bar Graph containing Top 50 Trending Hashtags of Instagram

VI. FUTURE SCOPE & CONCLUSION

The ability to create a dashboard using Python and Flask that displays real-time trending hashtags on Instagram and provides users with information such as the number of posts associated with a particular hashtag and the engagement rate is incredibly valuable to marketers and other professionals. This tool allows for a more efficient and effective way of gathering insights and making data-driven decisions.

sentiment, which can be used to inform social media strategy and drive more effective marketing campaigns. The development of tools such as the dashboard created in this project highlights the potential of data science to make sense of complex social media data and its ability to revolutionize the way we understand and engage with our audiences on social media platforms.

In conclusion, the use of data science techniques to analyze Instagram hashtag trends can provide valuable insights into audience behavior, preferences, and

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