

Exploring World Men's Fashion Styles From Millions Of Images From Social Site

Sonilasahar, Muhammad Saleem, Sneelakousar, Rana Mudassar Rasool, Riffat Hanif Mubasher Malik

Abstract: Everyday a number of users upload their images on social sharing platforms. Billions of images are uploaded daily and these images depict a lot of information about the culture and living style of different people living in different regions of the world. In this paper we investigate the current style or trends worldwide. In order to analyze the Men's clothes styles we presented a framework for millions of photos for all over the world. To analyze the Men's clothes and draw a result we used a huge dataset having a large number of photos. To discover consistent style clusters we also present a method that helps to find correlations in a dataset. We analyze millions of photos shared by different people on different platforms to derive visual insight.

Keywords: images, fashion style, social style, men's clothes, dataset

1. INTRODUCTION

This modern era of big data or many other tools enable us to conclude the information from the whole world in a different way which was not possible before this at all. The information concluded today by using modern day tools is more meaningful to us before which we were unaware at all. One example of this is that OCR scans millions of books which help us to accumulate a large number of data related to our culture and history [1]. Due to which cultural artifacts can be seen being developed by machine scanning techniques or on different social media platforms. Such as we can go more than traditional study if we apply natural language processing on different social media platforms messages relationship between time of day or mood can be found [2]. Natural language processing kind of study is only applicable to textual data, messages, tweets and books which can be concluded as structured data. On the other side a huge unstructured data or visual information is there such as in images which are uploaded daily on different social media platforms in billions. We can think about coming years to the position of anthropologist when they can analyze trillions of photos of years using different tools across the world. A number of new questions and answers will arise. This field of information gained from visual discovery or computer vision and graphics has not gained any remarkable attention so far as it is at its initial stage [3] [4] [5] [6] [7]. We tried to analyze thousands of images from social media to know about trends in fashion. In this paper we analyze the trends in fashion style or clothing as clothing has a huge role in the daily world or visual world. The analysis of trends in fashion style is not only important for fashion designers, retailers, advertisers, manufacturers but also have huge importance for many other applications. The fashion choices of any person are

dependent on many different factors such as culture, weather and then personal preference. We do our analysis by analyzing different photos of different cultures, geography and different times. We analyze the photos gained from different social media websites to have some meaningful facts about fashion style or trends in clothing. The analysis process of fashion and style involves (i) photos trending in community or photos uploaded on social media platforms daily (ii) images with annotated fashion attributes from FASHIONSTYLE dataset (iii) apply some machine learning algorithms on our dataset. We apply supervised and unsupervised learning methods. In supervised learning we trained the model with labeled images to predict clothing attributes in unseen images. While unsupervised learning method or clustering method helps us to find some correlation in our visual data or fashion clothing data. This is how our machine learning algorithms make it possible for us to detect various clothing features from photos uploaded by different daily users on different social media platforms and generate some useful results of trends or have visualizations of stats about fashion style trends. Now our model can help to answer some question such as:

- How is the frequency of using scarves changing in India over the period? (Figure 1)
- What styles are most specific to different regions of the world at different times?
- For some specific cities, such as Karachi, what styles are most characteristic of that city (Figures 3).

RELATED WORK

Many papers have been published as researchers are working to (i) to bring more light to visual trends (ii) measure features in different spaces and time. Such as [3] hit the idea of developing computational geography to analyze the visual characteristics of different cities with the help of Street View Imagery [2012], managed by procedure just to trace the discriminative elements [8] [3]. These optical characteristics can have similarity to some other properties of cities, [9] [10] [11]. The similarity or correspondence and then with the help of ground level images can be used to predict automatically such properties in a city. Beyond Analysis computer optic support can be used to answer some questions such as snow in photo. Which can be further enhanced to predict how much area has been covered with snow? [12] [13]. Other study includes the movement of people across the cities [Crandall

- Sonilasahar Department of computer science Institute of Southern Punjab Multan, Pakistan sonilasahar@cuvas.edu.pk
- Muhammad Saleem Department of computer science National College of Business Administration & Economics idsaleem@gmail.com
- Sneelakousar Department of computer science Institute of Southern Punjab Multan, Pakistan Sneelanoor@gmail.com
- Rana Mudassar Rasool Department of computer science Institute of Southern Punjab Multan, Pakistan razald4m@gmail.com
- Riffat Hanif Department of DPT Shahida Islam Medical College Lodhran riffathanif1122@gmail.com

et al. 2009], and then connection in facial appearance in different geo-location[14][15]and analysis of expressions of centuries [5]. Some work also describes different people's clothing and fashion attributes such as wearing glasses in images [16][17][18] [19]. Some other work include classifying attributes or to produce full-pixel-level clothing segment [20][21][22]or classifying some specific products [23][24][25]. Images in different websites are organized in the manner that the whole dataset can be annotated easily [16][18].

DATA

Our dataset have three main parts 1) Photos 2) People in these photos 3) and Clothing of these people in photos Images in the dataset are only collected from three countries of South Asia.

Karachi
Mumbai
Dhaka

Lahore
Kolkata
Chittagong

Table1: Cities sampled for our analysis.

EXPLORATORY ANALYSIS

To gain stats from the automatic predictions of machine learning so that we can find trends has been the main aim of our study. Some of these may make good sense that approves the approach, while others might be unpredictable. We have many methods to examine the fashion data, to prepare insights so one can draw results with this exploratory data analysis.

METHODOLOGY

In order to make calculations across the millions of photos from different social media platforms in our dataset we crave to generalize labeled data STREETSTYLE-27K to a complete body.Such asin order to count the number of people wearing glasses across the world, people wearing glasses annotations will be needed as training data and then predict the wearing glasses attribute in unseen or unlabeled million images. To do this task we use CNN [26].

DATASET SAMPLE



Figure 1.



Figure 2.



Figure 3.

Conclusion

In this paper we give a structure to examine fashion style trends among three countries of South Asia using thousands of photos. We also developed a FASHIONSTYLE, a large dataset of people images with clothing annotations to sanction this analysis process using the applications of Convolutional Neural Network. Our study presents the idea to use machine learning and big data for visual discovery at large scale easily.

LIMITATION

Any dataset having bias can generate unwanted results so it is important to be aware about biases on generating the results from the data. Face-book is a social media platform,

any contributor will be in an internet accessible area or where facebook is not banned. People of different ages may have different ratios to upload their photos on any social media platform. The other factor includes culture or where, when and who people photograph the photo. The face detector used by us in our study has no record regarding bias for different things such as age, gender and race. The person detector is also not assessed to decide bias in these factors. This can affect the process of who will be and will not be there in our dataset which can further result in bias. In order to make calculations across the number of photos from different social media platforms in our dataset we crave to generalize labeled data FASHIONSTYLE to a complete stuff. For example in order to count the number of people wearing glasses we

need to train the model with data having people wearing glasses to predict wearing of glasses in other unlabeled or

unseen images.

REFERENCES

- [1] Y. K. S. Jean-Baptiste Michel, "Quantitative Analysis of Culture Using Millions of Digitized Books," 2011.
- [2] M. W. M. Scott A. Golder*, "Diurnal and Seasonal Mood Vary with Work, Sleep, and Daylength Across Diverse Cultures," *Science*, 2011.
- [3] C. S. S. G. A. S. J. A. E. A. A. DOERSCH, "What makes Paris look like Paris?," *Communications of the ACM*, 2015.
- [4] G. Wang, Y. Xiong, J. Yun and J. R. Cavallaro, "Accelerating computer vision algorithms using OpenCL framework on the mobile GPU - A case study," *IEEE*.
- [5] S. R. K. S. S. Y. B. A. E. A. GINOSAR, "A Century of Portraits: A Visual Historical Record of American High School Yearbooks," *Proceedings of the IEEE International Conference on Computer Vision (ICCV) Workshops*, 2015, pp. 1-7, 2015.
- [6] J. K. Y. W. D. C. J. D. E. L. A. L. F.-F. Timnit Gebru, "Using Deep Learning and Google Street View to Estimate the Demographic Makeup of the US," 2017.
- [7] J.-Y. L. Y. J. A. E. A. A. ZHU, "AverageExplorer: interactive exploration and alignment of visual data collections," *ACM Transactions on Graphics*, 2014.
- [8] S. G. A. A. E. A. A. SINGH, "Unsupervised discovery of mid-level discriminative patches," *ECCV*, 2012.
- [9] ., E. A. R. R. A. A. Sean M. Arietta, "City Forensics: Using Visual Elements to Predict Non-Visual City Attributes," *IEEE*, 2014.
- [10] J. P. R. R. C. H. Nikhil Naik, "Streetscore - Predicting the Perceived Safety of One Million Streetscapes," *IEEE*, 2014.
- [11] A. N. N. P. D. R. R. A. H. DUBEY, "Deep Learning the City: Quantifying Urban Perception at a Global Scale," *ECCV*, 2016.
- [12] H. K. M. C. D. J. A. L. ZHANG, ". Mining photo-sharing websites to study ecological," *WWW*, 2012.
- [13] C. J. N. A. P. R. 2. MURDOCK, "Building dynamic cloud maps from the ground up," *ICCV*, 2015.
- [14] M. T. G. C. S. R. A. J. ISLAM, "Large-scale geo-facial image analysis.," 2015.
- [15] T. W. S. Z. M. A. J. N. 2. SALEM, "Analyzing human appearance as a cue for dating images," *WAVC*, 2016.
- [16] H. G. A. A. G. B. CHEN, " Describing clothing by semantic attributes," *ECCV*, 2012.
- [17] L. M. S. A. M. J. BOURDEV, "Describing people:Poselet-based attribute classification.," *ICCV*, 2011.
- [18] L. D. M. L. C. W. C. BOSSARD, " Apparel classification with styles," *Asian Conf. on Computer Vision*, 2013.
- [19] N. P. M. R. M. D. T. A. ZHANG, " Panda: Pose aligned networks for deep modeling attribute," *CVPR*, 2014.
- [20] K. K. M. O. L. A. B. T. YAMAGUCHI, "Parsing clothing in fashion photographs," *CVPR*, 2012.
- [21] K. K. M. A. B. T. YAMAGUCHI, "Paper doll parsing: Retrieving similar styles to parse clothing items.," *ICCV*, 2013.
- [22] W. L. P. A. L. L. YANG, "Clothing co-parsing by joint image segmentation and labeling.," *CVPR*, 2014.
- [23] W. W. C. B. A. P. R. A. S. DI, "Style finder: Fine-grained clothing styl," *CVPR*, 2013.
- [24] S. Y. K. B. A. A. B. T. VITTAYAKORN, " Runway to Realway: Visual analysis of fashion," *WAVC*, 2015.
- [25] M. H. H. X. L. S. B. A. C. KIAPOUR, "Where to Buy It: Matching street clothing photos in online shops.," *ICCV*, 2015.
- [26] A. S. I. A. H. G. E. KRIZHEVSKY, "ImageNet classification with deep convolutional neural networks," *NIPS*, 2012.