

Understanding the state of Visual Accessibility on Twitter

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ABSTRACT

Pictures on social media are mostly inaccessible to people with visual impairments. In 2016, Twitter began allowing users to add alternative text to images, providing access to visual content for blind users. However, the feature is turned off by default, requiring users to explicitly activate it. This is a problem, because many Twitter users are unaware of the feature. Our research seeks to understand, and eventually improve, the usage of alternative text on Twitter. We first wanted to get an understanding how often different types of pictures (photos, memes, screenshots, etc.) were present in the Twitter ecosystem. This was done by collecting millions of tweets from the Twitter Firehose, and categorizing a random set of 700 pictures. The same set of 9 million tweets were also used to identify accounts which use alternative text. Our research suggests that the feature is rarely used, on the order of 0.1% of photo tweets actually had alternative text. Further, about half of accounts collected were bots, suggesting that the feature may be used even less by humans. Our next step, pending IRB approval, will be to remotely interview these human users in order to understand their motivations and habits while providing alternative text.

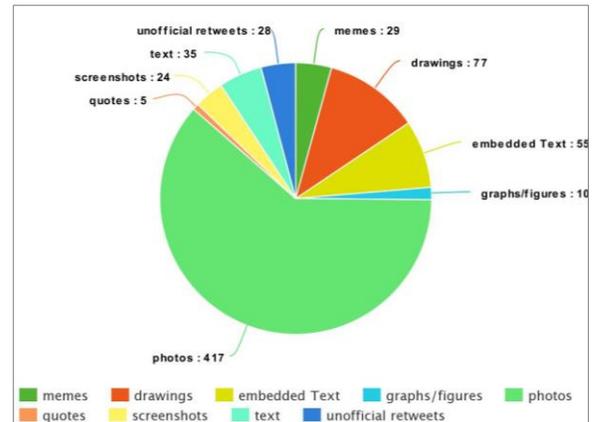
INTRODUCTION

Most social media platforms do not allow users to provide alternative text to uploaded images. Twitter is unique in that it does allow the addition of alternative text, so long as a feature is turned on in the accessibility settings.

UNDERSTANDING THE TWITTER ECOSYSTEM

We collected 9 million tweets using the Twitter Firehose and Python. Our results are that roughly 12% of tweets have photos, and 8% of photo tweets are retweets. Of these photos, .013% had alternative text.

To better understand the types of pictures found on Twitter, we did an analysis of 700 pictures from the collected tweets. They were classified into either photographs, memes, Images with embedded text, drawings, graphs/figures, screenshots, text, quotes, and unofficial retweets. The results can be seen in the pie chart below.



PROVIDING QUALITY ALTERNATIVE TEXT

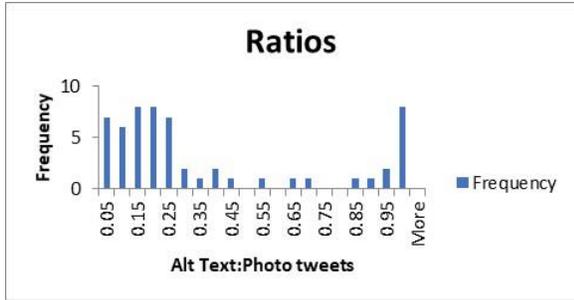
As a whole, both the quality and quantity of alternative text is lacking on Twitter. The alternative text field is used by search engine algorithms to better index images. In our sample of images with alternative text, the majority were simply links to other sites and pictures. Bots also made up a large percentage of alternative text.

We created a 1-3 grading scale for each category listed in “The Twitter Ecosystem” section. Two researches applied it to 10 images with alternative text that wasn’t from a bot. Unfortunately, inner-rater reliability was too low to test it on a larger sample size.

FREQUENCY OF ALTERNATIVE TEXT

Our research suggests that alternative text is not used very often on Twitter. Of the roughly 1.3 million photo tweets collected, only 1206 had alternative text!

From the collected tweets, we found 96 accounts which use alternative text, and roughly half of them were bots. For the accounts that weren’t bots, we looked at the ratios of pictures with alternative text to those without it. The graph is bimodal, suggesting that most users use it 90% or more of the time, or less than 30%.



The next thing for us to do is interview the 56 users of alternative text. Since the feature must be turned on, we want to understand their motivation for turning it on in the first place. We also want to know what sorts of things users identify as important information when providing alternative text.

We also plan to interview blind Twitter users, in order to understand their habits, experiences, and how provided/lack of alternative text affects their interaction with other users.

NEXT STEPS