been inflated by bot accounts.

To further help confirm the role of these bot accounts in inflating the apparent size of the Anonymous network, we examined the bot type scores provided by Botometer. These provide an indication of the degree to which a given accounts behaves like a specific form of bot. The results can be found in Fig. 9. From this, we can see that the 'fake follower' bot type is the most commonly identified type present in Anonymous accounts created during the protest period. This provides additional evidence that the mass increase seen in the network during this period is likely the result of bot activity inflating the perceived size of the group's Twitter presence.

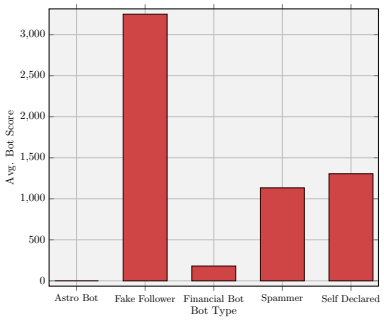

Figure 9: The number of high-scoring Anonymous bot accounts created during the BLM protest period that exhibited behaviors of five specific bot types.

Additionally, we conducted the same analysis for accounts created prior to 2020, finding similar indications that not only do accounts exhibiting bot-like behaviors constitute the majority of the network, but that the bots that they most commonly resemble are 'fake follower'. It must be noted, however, that the majority of high-scoring bot accounts were left unclassified as 'other' bots. Thus, further analysis is needed to complete our understanding of the role of bots in the network.

However, these results, taken in conjunction with the other findings in regards to the presence of bots in the network, indicate, in answer to RQ5, that bot activity has played a significant role in inflating the apparent size of the Anonymous Twitter resurgence. We also find indications that the large network identified in (**?**), and Anonymous' sizeable presence on Twitter in general, is likely inflated by bot-like accounts. This finding is also in keeping with established behaviors of central affiliates within the group, as previous studies have noted that key affiliates have previously utilized bots as a means of inflating the group's apparent size to other affiliates (**?**). This finding then, not only supports conjecture in the media that the rapid growth in Anonymous accounts during the 2020 BLM protests is likely suspicious in nature (**?**), but also suggests that the Anonymous Twitter network has also been in large part construed of bot-like accounts prior to these events.

6.5 Limitations

There are some limitations to this study which warrant mentioning. Firstly, we make the assumption that each account is operated by a single user. In reality, it is possible that some accounts could be operated by a single user. An analysis of account behaviours for patterns of similarity might be possible to approximate the number of 'true' users, though the lack of suitable ground-truth makes this a challenging problem.

Secondly, although we endeavoured to identify the number of removed accounts in the network, due to the limitations set by Twitter's API we cannot be certain that the number identified reflects the true number of removed accounts. However, given the similarity between our network and the one identified in (**?**), coupled with the degree of growth in the network in 2020, it is unlikely that the loss of these accounts has severely impacted our findings.

Moreover, given our reliance on a generalizable bot detection method, further investigation is needed to validate our initial findings. Ideally, this would be done via the use of a bespoke classifier, trained specifically on Anonymous data. This is particularly needed in terms of the bot type detection.

Finally, due to the limitation of the most recent 3,200 tweets, our sampling is necessarily incomplete, and the results may be biased towards the accounts most active during the BLM protests. Validation of these results using a complete sampling would therefore be of value, as it could not be achieved in this work due to rate limit restrictions set by Twitter's API.

7 Conclusions and Future Work

In summary we find that, contrary to the findings of previous studies (**??**), the group shows evidence of rapid growth in the time-period surrounding the 2020 BLM protests. Moreover, we find that the network as a whole frequently tweeted about BLM-related topics and that these tweets spiked considerably after George Floyd's death, supporting the notion that the Anonymous resurgence was, at least in part, a result of this. We also find indications, however, that this support was short-lived, with Anonymous showing little interest in BLM after the period of significant protest.

We also find evidence of automation across the majority of the accounts in the Anonymous network. This indicates that whilst the Anonymous network received a large amount of growth during the protests, much of this size may be the result of inflation through the use of bot accounts. Moreover, we note that bot accounts seem to constitute a large proportion of the Anonymous accounts that existed prior to 2020. This lends new insights into the group's presence on Twitter, indicating that the large presence of the group noted in past research (**?**) is likely not an accurate representation of the genuine number of Anonymous affiliates.

Our results also indicate the potential power that bot activity has to mask the true extent of a groups presence on social media. A finding which may have implications to the study of other groups with a significant online presence, such as QAnon, emphasizing a need for further research.

In future, the apparent role that automation plays in the Anonymous Twitter network could lead to a reinterpretation of the group's presence on social media. To strengthen our findings, we believe that further research into developing bespoke methods for identifying and analyzing

bot activity in the Anonymous Twitter network would be valuable. Furthermore, analysis of the interaction