BEHIND THE MASK: A COMPUTATIONAL STUDY OF ANONYMOUS' PRESENCE ON TWITTER

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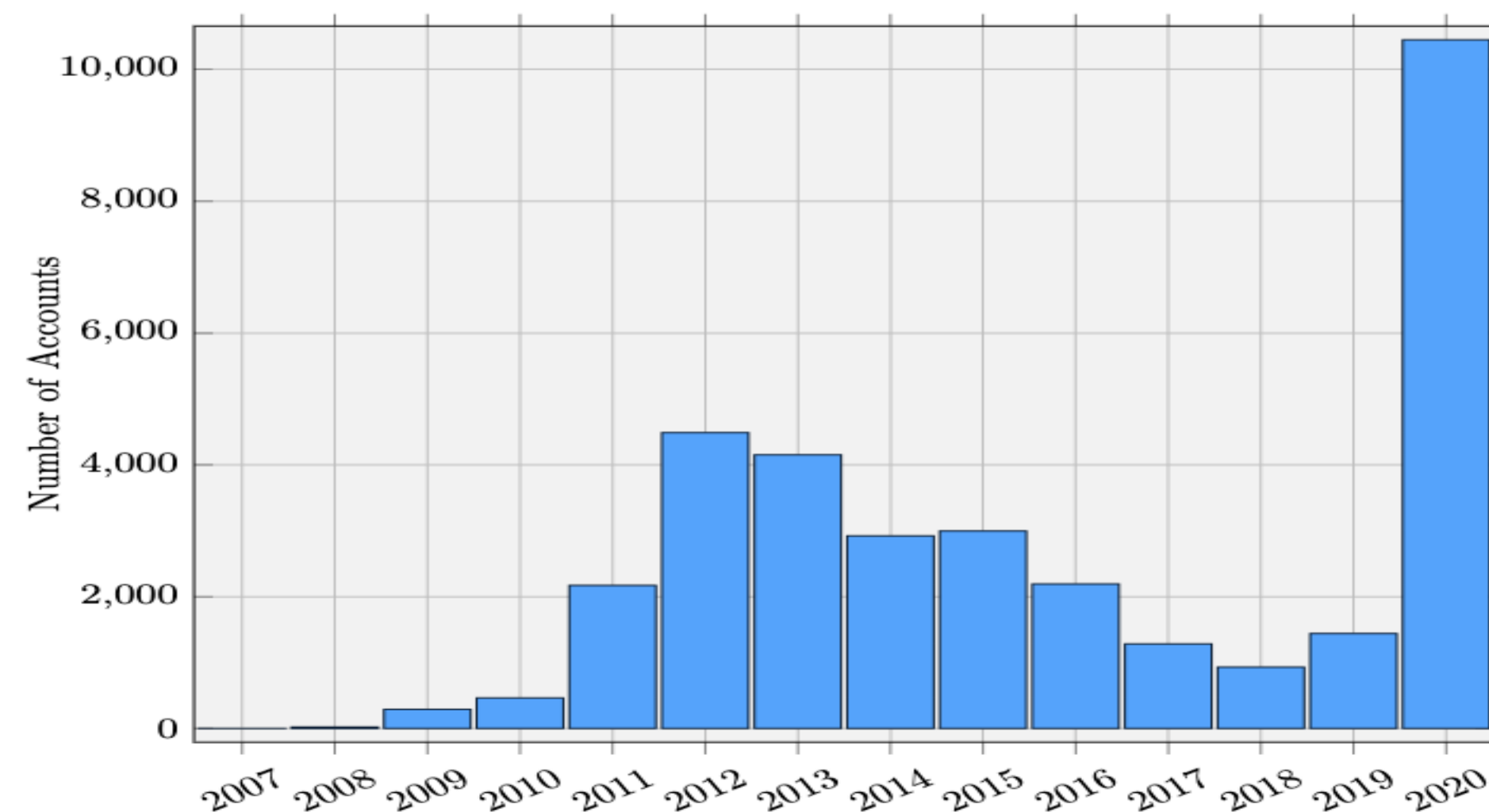
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Background

- Anonymous is unusual amongst hacktivist groups, leveraging Twitter to broadcast their actions.
- Although the group appeared to fragment after the arrest of key members in 2013, news reports indicated that the group attempted to re-establish itself in 2020 – supporting the Black Lives Matter (BLM) led protests after George Floyd's murder.[2]
- Our research analysed Anonymous on Twitter, examining it's evolution over time, it's apparent resurgence in 2020, and the role of bot accounts as a means of inflating the size of this resurgence.[1,2]

Finding Anonymous Twitter Accounts

- Combined approach leveraging snowball sampling and machine learning classification used to find Anonymous-affiliated Twitter accounts.

- ~40,000 Twitter accounts annotated as Anonymous-affiliated (or not). Annotated accounts used to train Anonymous account ML classifier.

- Trained classifier used to identify all Anonymous accounts in a sample of ~10 million Twitter accounts via two-stage snowball sampling.

- ~30,000 Anonymous accounts identified across the two stages of snowball sampling.

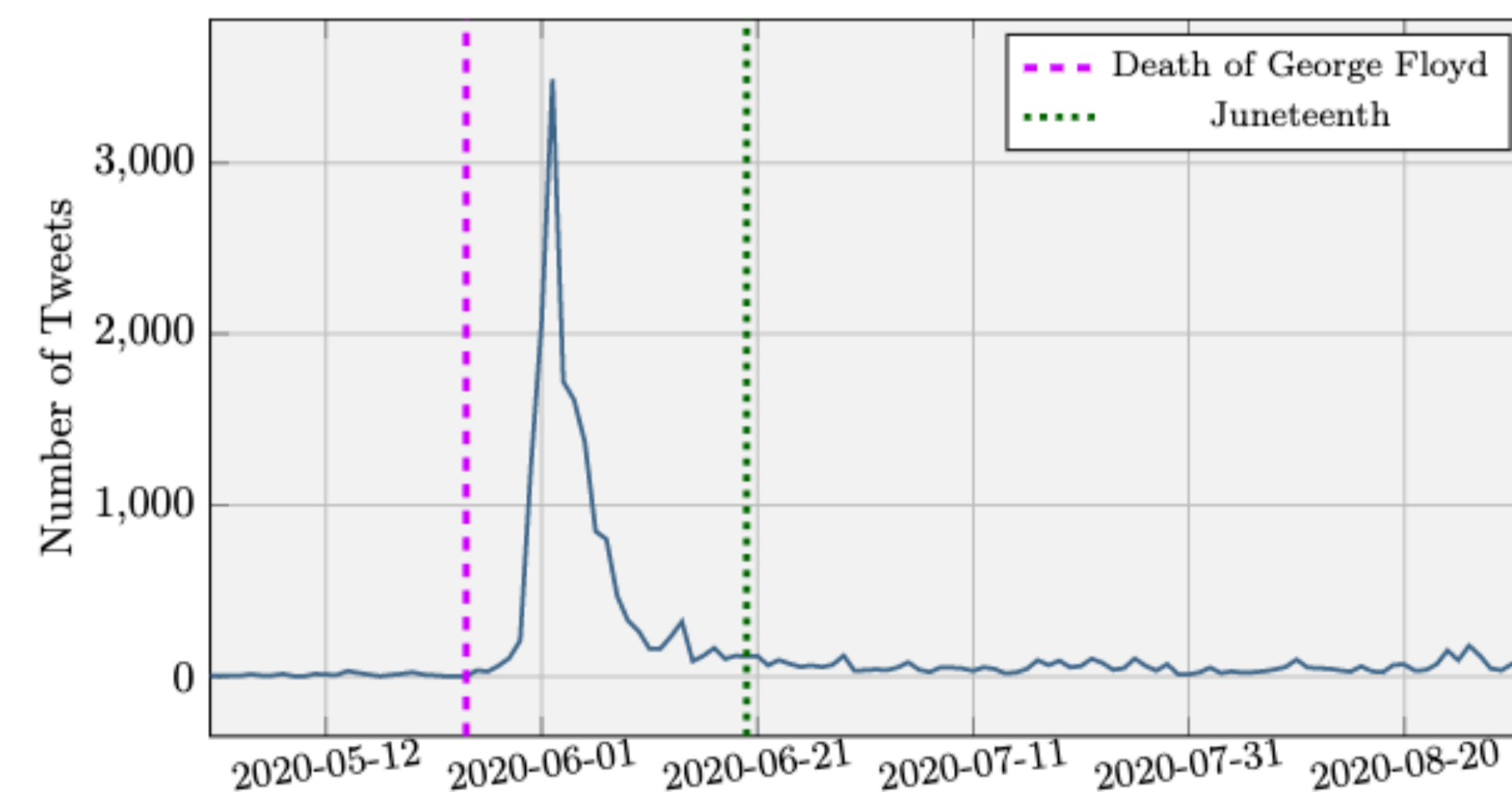## Number of Accounts Joining the Anonymous Twitter Network Over Time

- A fall in accounts joining the Anonymous network was noted in 2013, after the arrest of key members of the group.
- Massive growth in the network observed in 2020, aligning with the BLM protests of George Floyd's murder.

Topic Modelling of Anonymous Tweets Posted During the 2020 BLM Protests

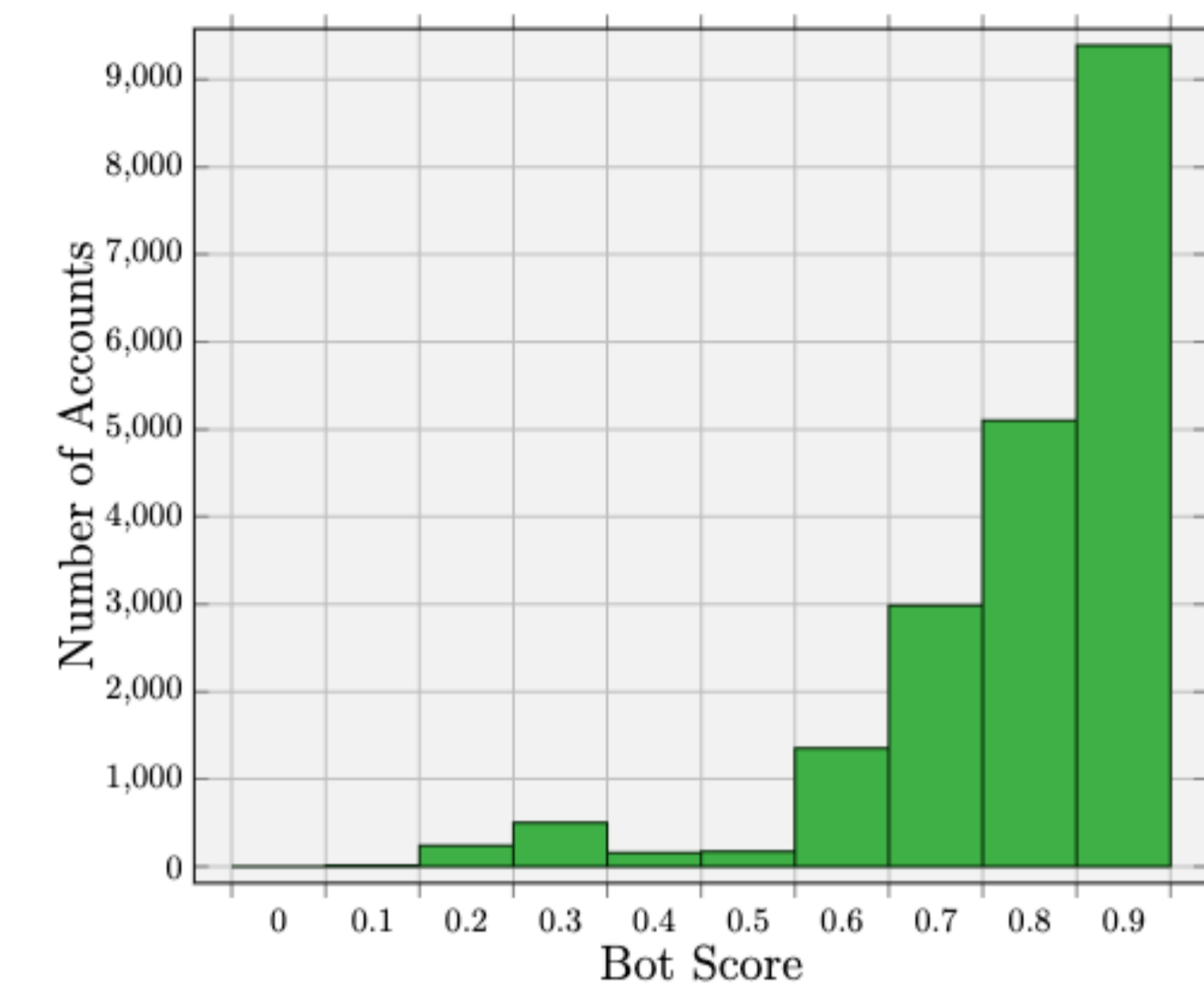| Topics	Keywords
Anonymous and BLM	anonymous, blacklivesmatter, legion, government, expect, follow, police, think, leak, forget
BLM Protests	black, life, matter, blacklivesmatter, street, georgefloyd, impunity, people, protest, icantbreathe
George Floyd Protests and BLM	icantbreathe, georgefloyd, blacklivesmatter, regime, trump, force, protestors, kpop, state, opfancam
George Floyd Protests	police, george, floyd, officer, murder, protest, justice, people, state, death
Police, Protest, and BLM	police, protester, cop, protest, officer, people, man, shot, blacklivesmatter, video
Police and Social Justice	woman, year, police, child, black, abuse, girl, man, killed, white
Racial Tension	people, black, fuck, shit, fucking, white, racist, thing, guy, woman
Politics and Race	people, government, country, time, black, power, racism, change, life, police
US Presidential Election	trump, president, vote, biden, election, state, american, joe, republican, donald
US Politics and China	trump, hong, kong, president, military, online, state, white, law, blacklivesmatter
International Politics	people, china, israel, state, palestinian, war, turkey, israeli, country, american
Social Issues	money, people, pay, school, work, worker, job, government, business, tax
COVID-19	covid, people, case, death, covid19, mask, coronavirus, pandemic, virus, died
Computer Security	data, security, app, link, phone, government, user, tool, anonymous, file
Julian Assange	assange, julian, journalist, anonymous, freeassange, people, crime, julianassange, prison, free
Positive Messaging	time, love, day, good, year, life, people, today, thing, friend
Anonymous and Fake Accounts	medium, account, fake, group, anonymous, campaign, real, people, bot, spread
Child Trafficking and Jeffrey Epstein	opdeatheaters, child, epstein, trump, trafficking, rape, crime, network, jeffrey, sex
Social Media	follow, facebook, retweet, day, instagram, video, read, post, people, time

- Clear engagement in a range of BLM-related topics was observed, with discussion of these topics being the most common during the protest period.
- This provides evidence that Anonymous on Twitter engaged with the protests, and indicates that the large growth in the network during 2020 was likely related to this.

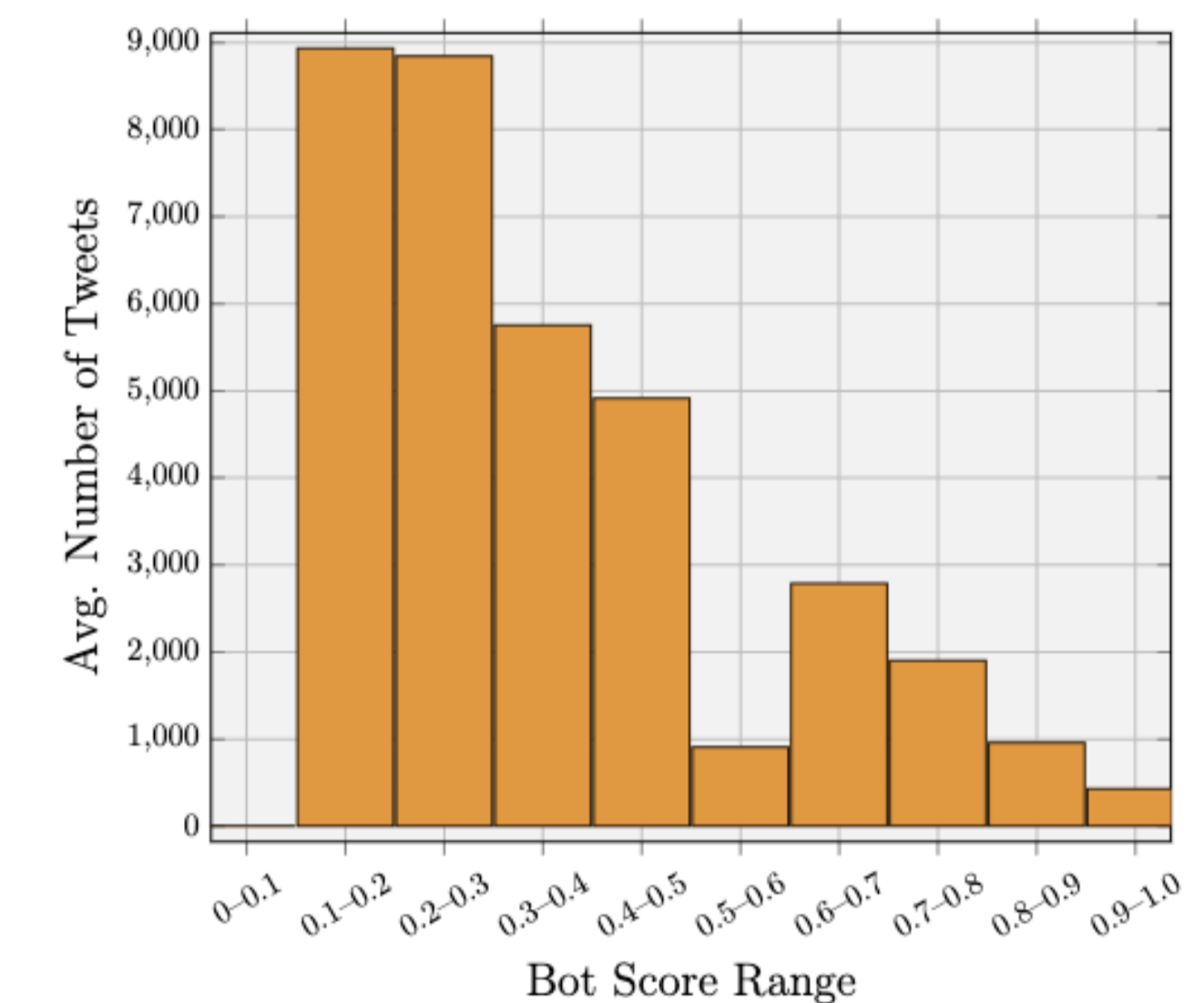## Frequency of Anonymous Tweets Discussing BLM Over Time

- Analysis of the number of Anonymous tweets containing BLM-related topics posted each day during the protest period revealed that the group's interest in BLM was not sustained over time.
- This supports suggestions in the media that Anonymous' interest in BLM was not significant and that the group may have been using the prominent public issue to regain relevance.

Distribution of Botometer Scores for Anonymous Accounts Created in 2020

- The majority of newly created Anonymous Twitter accounts exhibit high degrees of "bot-like" behaviour.
- This is likely down to their use of generic Anonymous imagery in the profiles and their lack of activity.
- These findings indicate that the large growth in the network during 2020 may have been inflated by bots.

Avg. Number of Tweets per Anonymous Account for Accounts in Different Bot Score Ranges

- Further analysis revealed that the most bot-like accounts seldom tweeted, further supporting indications that these new accounts are simply functioning to inflate the apparent size of the 2020 resurgence.

References

1. K. Jones, J.R.C Nurse, S. Li. Behind the Mask: A Computational Study of Anonymous' Presence on Twitter. *Proceedings of the International AAAI Conference on Web and Social Media*, 14(1). 2020.
2. K. Jones, J.R.C Nurse, S. Li. Out of the Shadows: Analyzing Anonymous' Twitter Resurgence during the 2020 Black Lives Matter Protests. *Proceedings of the International AAAI Conference on Web and Social Media*, 16(1), 417-428.