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Cambridge Analytica and Facebook: The Scandal and the Fallout on Twitter

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Data drives all we do.

Cambridge Analytica main slogan.

Rules don't matter for them.
For them, this is a war, and it's all fair.

Christopher Wylie,
former datascientist at Cambridge Analytica, about its leaders.

Contents

1 | The case story

On Saturday 17 of March 2018, the newspapers The Observer and The New York Times broke reports on how the consulting firm Cambridge Analytica harvested private information from the Facebook profiles of more than 50 million users without their permission, making it one of the largest data leaks in the social network's history. [1]. REF OBSERVER

The whistleblower Christopher Wylie, datascientist and former director of research at Cambridge Analytica revealed... Cambridge Analytica described itself as a company providing consumer research, targeted advertising and other data-related services to both political and corporate clients.

What, Where, Who, Why, Where ?

Timeline da sistemare: [2]

- March 17, 2018: The Observer and The New York Times publish joint reports on data harvesting by Cambridge Analytica. UK Information Commissioner Elizabeth Denham issues statement that they are "investigating circumstances in which Facebook data may have been illegally acquired and used." Politicians in US and UK call for investigation.

- March 19, 2018: Channel 4 News publishes part 1 of their undercover investigation into Cambridge Analytica. Facebook sends investigators to Cambridge Analytica's offices. UK Information Commissioner orders them to stand down.

- March 20, 2018: Channel 4 News publishes part 2 of their undercover investigation into Cambridge Analytica, where they boast about getting Donald Trump elected. British MP Damian Collins calls on Facebook to present oral evidence on Cambridge Analytica. Facebook agrees to send former operations manager Sandy Parakilas. Facebook holds internal Q&A with attorney Paul Grewal to discuss the crisis, but CEO Mark Zuckerberg and COO Sheryl Sandberg do not attend. Cambridge Analytica suspends CEO Alexander Nix. Facebook demands to inspect Christopher Wylie's phone. FTC opens investigation into Facebook.
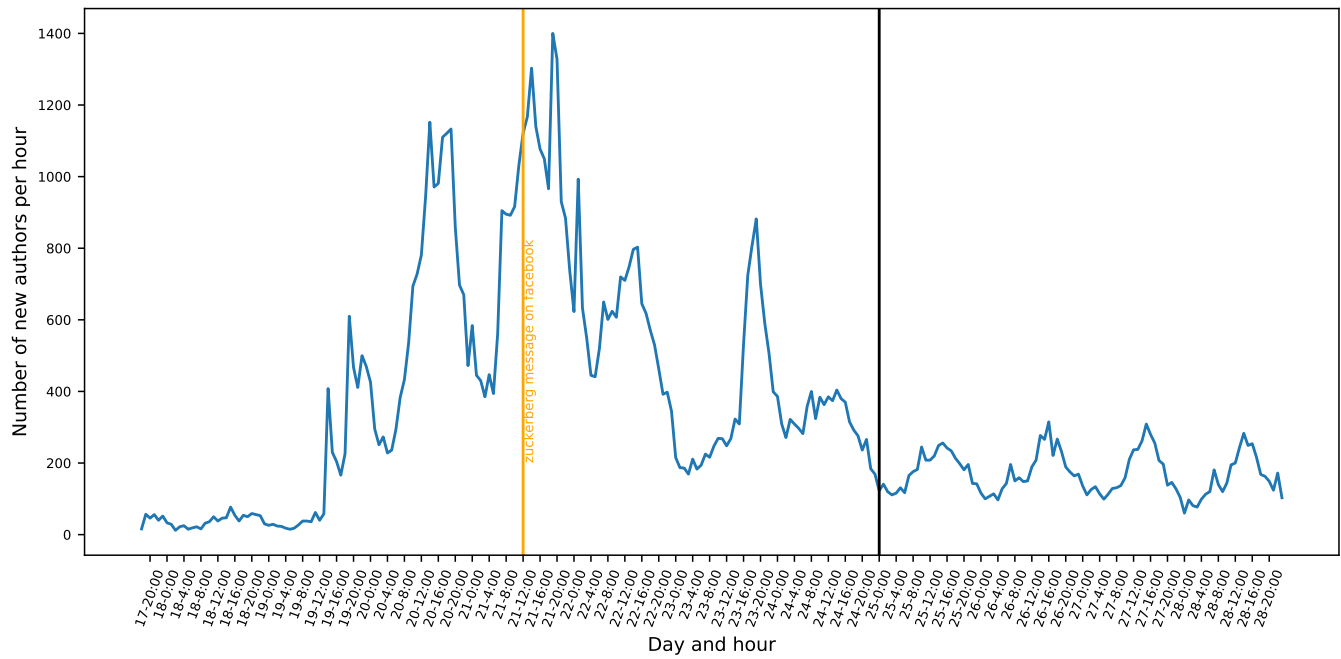
- to be continued...

Figure 2.1: New authors time history

3 | Network properties
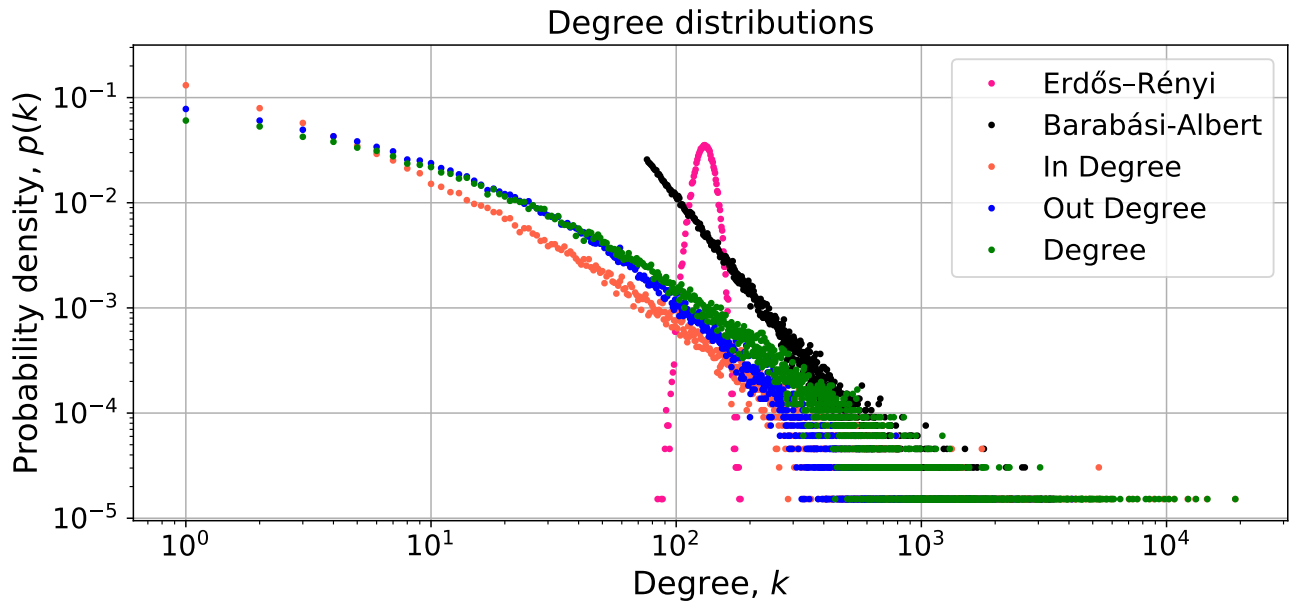
3.1 Degree distribution
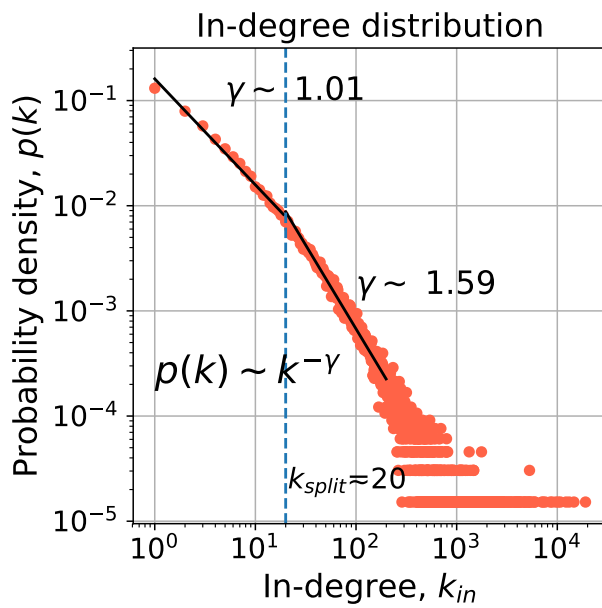

Figure 3.1: New authors time history
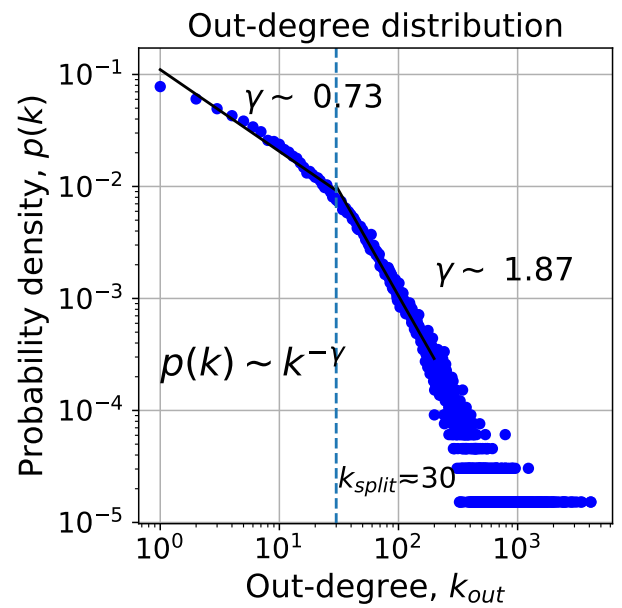

Figure 3.2

Figure 3.3

3.1.1   Random graphs

In order to generate an Erdos-Renyi random network we have choosen a "linking probability" p using the average degree of the original undirected network, by using eq. 3.1.

$$p_{ER} \approx \frac{\langle k \rangle}{N} = \frac{57}{65729} \approx 0.001 \tag{3.1}$$

Each new node of the random network generated with the Barabasi-Albert model has been attached to the other nodes with a number of links m equal to the average degree of the original network, considered undirected:

$$m = 2 \langle k \rangle = 76 \tag{3.2}$$

4 | Network dynamics

5 | Communities discovery

6 | Spreading

In this chapter we'll describe the results we obtained by applying the **SI**, **SIS**, **SIR**, and **Threshold** diffusion models both on the crawled data and on the synthetic graphs (Erdős–Rényi and Barabási–Albert) generated from the original one. For every model, a comparison between the three networks will be provided.

6.1   SI model

6.2   SIS model

6.3   SIR model

6.4   Threshold model

7 | Summary

References

[1] New York Times. *How Trump Consultants Exploited the Facebook Data of Millions*. https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html. [Online; accessed 19-May-2018]. 2018.

[2] New York Times. *Cambridge Analytica and Facebook: The Scandal and the Fallout So Far*. https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html. [Online; accessed 19-May-2018]. 2018.