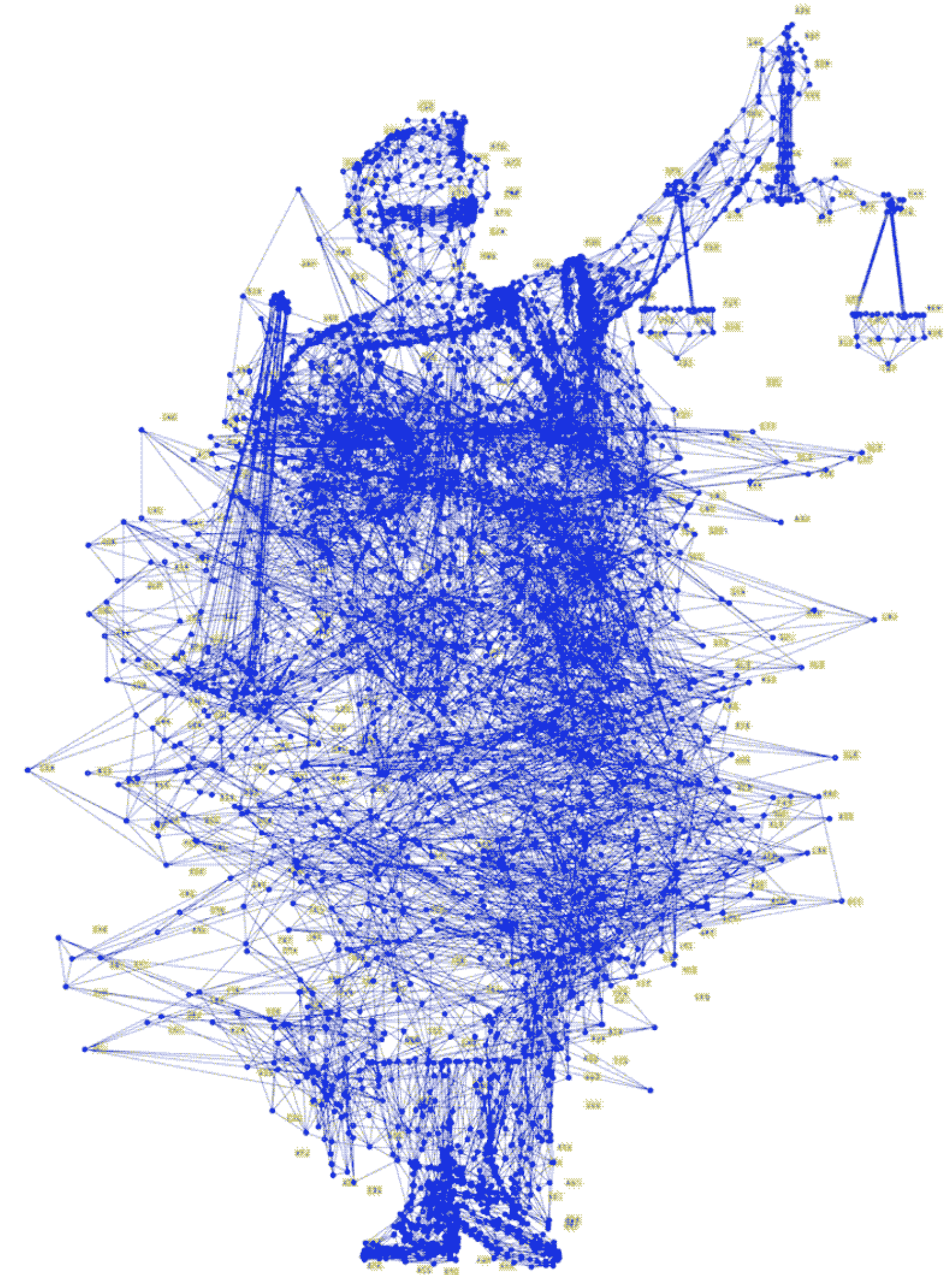


IT UNIVERSITY OF COPENHAGEN

# Reflections in Data Science

BSREDAS1KU-20201

2020-03-17



Fairness by Pablo Delcan

<https://www.technologyreview.com/s/607955/inspecting-algorithms-for-bias>

## Exercise 5 - Plan

- Calling BS with exponential growth (15 minutes)
- Algorithmic bias (20 minutes)

<https://github.com/tocunha/reflectionsdatascience/>



# Calling BS with exponential growth



**Donald J. Trump** ✓

@realDonaldTrump



So last year 37,000 Americans died from the common Flu. It averages between 27,000 and 70,000 per year. Nothing is shut down, life & the economy go on. At this moment there are 546 confirmed cases of CoronaVirus, with 22 deaths. Think about that!

3:47 PM · Mar 9, 2020 · [Twitter for iPhone](#)

**79.5K** Retweets   **281.4K** Likes

<https://github.com/tocunha/reflectionsdatascience/tree/master/exercise5-10-03-2020>

# Calling BS with exponential growth

$N_d$  = Number of cases on a given day

$E$  = Average number of people someone infected is exposed to each day

$p$  = Probability of each exposure becoming an infection

$$\Delta N_d = E \cdot p \cdot N_d$$

$$N_{d+1} = N_d + E \cdot p \cdot N_d$$

$$N_{d+1} = \underbrace{(1 + E \cdot p)} N_d \longrightarrow N_d = (1 + E \cdot p)^d \cdot N_0$$

For example, 1.15

# Algorithmic bias

- You want to adopt a pet. You are in doubt in between a cat or a dog.
- To help with this important choice, you implement an AI system to select the best match.
- Your goal is to be happy, independent of the choice.

<https://github.com/tocunha/reflectionsdatscience/tree/master/exercise6-17-03-2020>



# Algorithmic bias



[https://www.youtube.com/watch?v= DZJV9ey1nE](https://www.youtube.com/watch?v=DZJV9ey1nE)