

# CRITICAL ALGORITHMS SAMPLE LECTURE

## 1. INTRODUCTION

Algorithms are components of the computer software responsible for generation of information. They are beneficial in sorting large amount of data and have the ability to deliver the information that is resourceful. Automated algorithms make use of proper structured commands to create levels for filtration of the information based on certain motives and the desired outcomes [1].

## 2. DETAILED TOPIC DESCRIPTION

*Can any problem be solved using an algorithm?* The political, social and cultural effect of an algorithmic solution constitute side effects that are real issues [2].

*Does an algorithm designed to solve existing technical issues counteract or overstate the mitigation of social, political and ethical issues?* It was found through a study that Google's adverts algorithm automatically suggests possible arrest ads for racial associated names [3].

*How can this association destruct someone's someone job or rental applications?* Negative impact adverts are more likely to get clicks than clean positive adverts due to involving a person name. High clicks increases the value of those adverts which increases their appearance thus increasing the prejudice it imposes.

Class discussion questions:

- The discrimination produced in search results is done on purpose but do companies need to correct the resulting prejudice?
- If an algorithm that provides solutions is being provided, is it necessary to observe how it executes and solve a problem?
- It is possible to develop an algorithm that is bias-free or that has correction measures built within it for explicit biases? Are there any methods rather than reverse-engineering, to access prejudicial results?

Measuring Algorithm accountability has side effect for which it requires the knowledge of who or which group is responsible for regulating the distribution of information and private realms [4].

*What would supervising or designing ethical algorithms look like?* Algorithms are designed to function within a given dataset. It uses conditions, expectations of the culture, models of the business etc. Focusing on the algorithm as an inducer for both advantages and disadvantages of the data-driven world. The design of algorithms allows them to learn through neural networks and allows the code to be altered. Some critical questions should be asked regarding the accountability for which some of them are stated below:

- Is it discussion about algorithmic accountability more helpful compared to the discussion about party being accountable for the results of their method?
- What kind of data protection can be helpful for diagnosing any violation?

## 3. CASE STUDY 1: PREDICTIVE POLICING

Philadelphia and Baltimore police adopted the use of predictive algorithm to determine after release the parolees capability to commit murder. Jon Doe was young when he was arrested for possession of drugs. After parole, the algorithm selected him as possible murder even though he was not capable of that. The algorithm does not consider the nature of the crime, age and gender, when predicting the future, it is purely predictive.

It is an issue that the parole of John Doe is imposed to supervision. This mechanism undermines the due process. This raises the question of how does an algorithm decide the way a person is assessed to pay for the crimes they did?

In the United States, "stop-and-frisk" program has been an issue. Even though the police state that they are not targeting black men, black men are stopped at an unrepresentative rate in United States. Arguments arise when the journalist try to display discriminate behaviour of the algorithm. This gives rise to another question.

*How can the journalist challenge owners of the algorithms. Human can be decision makers, the technology responsible for generation of the information to alert the decision-maker is actually difficult to study.*

#### 4. CASE STUDY 2: VISIBILITY OR INVISIBILITY OF ONLINE CONTENT

Germany is one of the countries that imposed Google to have a change in their algorithm such that it removes abusive incomplete word suggestions automatically. The exam of this is query name for "George Wilson" which associate it with the White Supremacist. Also the wife of the former German president Christian Wulff, was associated with being a former prostitute. People with same names with criminals are at risk of his algorithm generated data.

*Should the algorithm be held responsible for the false data presented? What if the Christian Wulff was a former prostitute the other person sharing her name is now being affected? How can one appeal such act to minimize the false data produced by the algorithm?*

Even though the companies may change the behaviour of their algorithms due to lawsuits, media is another factor which amplifiers the visibility of the issue. This effect is observed from Wulff as she is amongst the top articles for suing Google for deformation of character. This effect give rise to another two questions.

*What does it mean to point the blame on the algorithm whereas the media makes the problem more visible? Is there a private way the problem can solve?*

#### 5. CASE STUDY 3: DISCRIMINATORY BLACK BOX

It is known that insurance providers are not supposed to discriminate or base the selection of their clients using classes. This implies one cannot be declined insurance due to their classes such as blacks. This case is mostly violated by insurance companies and this makes them a source of discrimination. Insurance companies always try to increase their profit by avoiding risks. Economically marginalized groups are seen as risky to insure, due to how prejudice and stigmatization has in the past made it difficult for them to obtain quality education, healthcare privilege and the luxury houses in safe neighbourhoods. The ensurers maximize their profit and reduce risk by not providing cover for economically marginalized groups.

Since insurance covers are processed by algorithms, it becomes tedious to obtain if the person being discriminated is correct or not. The programmers of the algorithm may have no intentions of producing discriminatory outcomes.

#### 6. QUESTIONS TO CONSIDER

- What are the key social, cultural, and ethical anxiousness that occur when imagining of algorithmic accountability? To justify what happened, what needs to be understood?
- How are the advantages and disadvantages of algorithm accountability different for different domains such as marketing, healthcare and criminal justice ?
- What are extra important case studies that high spot the anxiousness, opportunity cost, and concerns?
- Who is responsible for holding algorithms accountable? What role does the government play? What role does data providers play? What role does technologies and tools play? What role does educational institutions play? What role does the media play?
- Who should be responsible for data protection? Which part does the government play in protecting data keepers?
- Who can oppose algorithmic systems? What kind of skills they require to perform that?
- Does algorithms influence the distribution of information in new ways,? who is affcted by the results?

#### REFERENCES

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