OPEN ACCESS   **EDITORIAL LETTER**

Intellectual Laziness and Artificial Intelligence

Hussam Mezher Merdas

Department of Computer Science, University of Kerbala, Karbala, Iraq.

*Corresponding Author: Hussam Mezher Merdas , Department of Computer Science, University of Kerbala, Karbala, Iraq.

Abstract:

In recent times, technologies have emerged that save humans time and effort. Researchers in the technical field no longer create algorithms from scratch; instead, they may summon them using a few lines of code. Human nature tends to lean towards comfort and laziness, which could pose a long-term and even immediate threat by producing a new generation of researchers who lack an understanding of the mathematical principles and basic programming codes that underpin today's sciences. This study discusses the impact of using artificial intelligence and ready-made machine learning algorithms on the thinking of researchers in the current and future times. This study compares current studies that utilized modern techniques with previous studies that relied on mathematical sciences and fundamental programming codes. This study serves as a warning to the scientific community to be cautious about the overuse of artificial intelligence, which may generate researchers who are intellectually lazier

Key Words: Automation, Cognitive Offloading, Algorithmic Bias

Introduction

The early scientists relied on research and experimentation. The research problem and scientific gap inspire the researcher to formulate hypotheses and conduct experiments to verify their results. After a necessary period and rigorous lab work, scientists provide us with findings that benefit humanity throughout the ages. This action stimulates the human mind and inspires individuals to continue striving. When looking at our present days, researchers mostly rely on the work of previous scientists and modern technologies that have made everything so easy, resulting in numerous repetitive and superficial research studies.

The ChatGPT was created by OpenAI (https://chat.openai.com) to serve humanity as a whole and researchers in particular. However, on the other hand, it has drawbacks that make researchers lazier. This also applies to the artificial intelligence algorithms currently in use. In the past, researchers used to write code in binary (0,1), and then researchers started using code lines. After that, there were ready-made algorithms, and now even algorithms have become mere names in software offices, making researchers even lazier.

A research team convened to conduct a comparative study of the most important artificial intelligence algorithms currently used for prediction. After reviewing previous studies, we settled on ten

crucial algorithms, easily implementing predictions through readily available code. During the same period, ChatGPT, which we used to streamline our work, was introduced. We achieved positive results in this study. This led us to ponder deeply, what comes next? Did this study provide us with scientific value? What did this study imprint in our minds? All these questions had only one surprising and discouraging answer: We didn't learn anything new or significant. All the algorithms we used were pre-existing and previously suggested; there were no newly discovered mathematical equations. When comparing our research study, as mentioned, with a research study published in 1996 for example (Monostori et al., 1996), we will find a significant difference between the results achieved by today's researchers, represented by our team, and the results of the researchers in that study. It becomes clear how they approached the subject purely from a mathematical and technological perspective, in contrast to what researchers are doing now by utilizing existing algorithms and technology without the burden of modern discovery.

Let's take the Support vector machines (SVM) algorithm as an example, not limited to it. In a study from 2002, it was thoroughly explained with all its details and how to write its code (Cai et al., 2002). However, when researchers use it as Python code, you'll find that the code is just a few lines, as shown in Box 1 below, taken from

```
>>> from sklearn import svm
>>> X = [[0, 0], [1, 1]]
>>> y = [0, 1]
>>> clf = svm.SVC()
>>> clf.fit(X, y)
SVC()
```

Box 1. The code of SVM in Python.

Furthermore, concerning the datasets, they are widely available, so researchers don't have to collect or sometimes even clean the data, making them even lazier. All these factors produce researchers with a fragile foundation and unaware of the seriousness of the matter.

In summary of the above, the scientific community has become complacent, relying on early scientists, and ideas have become repetitive with disappointing results. Everything has become readily available. The final blow came with the emergence of ChatGPT, making young scientists seem like they live off the past achievements of previous researchers. The researcher has become a lazy old figure, no longer willing to delve deep. It's the last cry to revive sciences built on coherent steps and discoveries.

We suggest that as a team that has tasted the bitterness of intellectual laziness and is immersed in the sea of repetitive and routine studies, the research community should wake up and return to discussions and in-depth sciences that serve society. There's nothing wrong with using modern artificial intelligence tools to facilitate life for certain segments of society, but researchers and scientists should not be constrained by drowning them in readily available information. This could pose a long-term danger of generations unable to solve a simple mathematical equation or even interpret a single line of code.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

Acknowledgments

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