The utility of computer science in the COVID-19 pandemic

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1. Introduction

With the recent, and ongoing COVID-19 pandemic, the uses and limitations of modern computational technology have increasingly become apparent. Education and work have been forced to move out of the traditional setting, with an emphasis on working from home, a test for the ability and flexibility of our technological systems, and the challenge this poses to productivity. Furthermore, the utility of computer science in studying the pandemic itself has also become very clear, with practitioners and policy makers constantly trying to leverage technology to react to a changing threat.

2. Work

As a result of the pandemic, in April and May of 2020, large changes in the world's working population came about rapidly. This led to around half of the US workforce was working from home, mainly in cities such as New York City [1].

Naturally a workforce at home is a workforce forced to leverage technology, and commonly used software such as Microsoft Office and Google Docs, alongside the popular usage of video conferencing, such as Microsoft Teams and Zoom, who profited greatly from the need of these technologies. The flexibility to suddenly expand to the much larger usage of these technology seemingly represents the ability of modern technology, and the fact that workplaces were able to keep doing their work.

Arguably however, recent events have only shown our over reliance on global organisations such as Google, with recent outages [2] showing a need to perhaps decentralise, particularly when more people and businesses are using the central providers, and increasing the impact of such an outage [5].

3. Stopping a pandemic

The potential of computer science in medicine has been clear for a long time. In response to the pandemic, professionals have been using forecasting models to predict and thusly attempt to control spread, a use of modern machine learning techniques, and of the data we collect [4]. Yet, although useful, these models can be flawed and potentially misleading, particularly with increasing complexity which can introduce flaws into the models [6].

In addition, more traditional methods, such as compiling data using the power of the internet, to collect information and find relations, for tasks such as looking for candidate drugs [3], have proved useful.

4. Conclusion

Computer science has seemingly enabled a timely and effective response to the COVID-19 pandemic, and thus clearly shows its utility in further pandemics, both to people and to medical professionals. However, there are questions that are raised that cannot be ignored, particularly with the increasing use of technology, that may pose a hindrance in the future.

References

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