Short Paper

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Abstract

This is the abstract.
It consists of two paragraphs.

Keywords: keyword1, keyword2

1. Introduction

The idea is to explore how the use of Large Language Models (LLMs) as General Purpose Technology (GPT) could reshape industries, considering the generalization capabilities of LLMs and the rapid adoption of these tools by the public and firms.

A. Background on the potential economic impact of Large Language Models (LLMs) as General Purpose Technology (GPT) B. Objective of the paper: Exploring how the use of LLMs as GPT could reshape industries and contribute to economic growth

Generalization of tools seems to be an important characteristic to leverage the potential of growth and development, because if a same tool could be broad use for different purposes, so the tool becomes in a very valuable tool.

Until now the abilities reached by the Large Languages Models LLMs have arisen to a certain level of computational power that might require scaling up past this threshold (10^23 training FLOPs), meaning that they are able to perform multiple tasks related to Text Understanding and Generation,Problem Solving and Mathematics, Image and Data Classification, Text Analysis and Comprehension, and so on, but as (Wei et al., 2022) suggested for future works, it could be possible new abilities could emerge scaling up the models and understanding how emergence occurs would provide new insights into how to train more-capable language models.

On the other hand, the use of LLMs as a base technology of other tools, such as software-AI powered, open a new window and enveloped the potential of productivity improvements of the work-human force or human capital as it was mention by (Eloundou et al., 2023) telling that LLMs such as GPTs exhibit traits of general-purpose technologies, could have considerable economic, social, and policy implications.

So, the potential arising of emergent abilities and the wide use of LLMs as enablers of new tools (AI based-software) alongside the spread use of tools such as ChatGPT by a large amount of humans (here: million of users of chatGPT), it could signify a future unseen before by the human beings, because the expansion and pushing of new boarders and limits would be accelerated.

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2. Assessing the Potential Economic Impact

Starting Point - Assessing the potential economic impact of LLMs based on a retrospective approach: Considering the potential of the AI as a new GPT, what would be its impact on reshaping industries and economic growth, base on the behavior of last General Purpose Technology like internet, electricity, etc.

A. Defining General Purpose Technology (GPT)

General Purpose Technology is a transformative technology with a strong improvement process at the begining and eventually becoming widely adopted for its multiples uses, while producing many spillover effects (Brynjolfsson et al., 2017). As such, it have a pervasive impact on society as a whole, mainly due to its capability to redefine the ways in which businesses operate, improve productive and contribute to long-term economic growth. Some well-know examples are steam power, electricity, semiconductors, and internet.

The positive expectations regarding how new technologies could drive development, economic growth, and generate substantial profits are often accompanied by the optimistic mindset of industrial and well-known technology leaders, as well as venture capitalists. Simultaneously, the financial sector capitalizes on this excitement through speculative investments and forecasts of future company wealth. As mentioned by (Brynjolfsson et al., 2017), "there is no inherent inconsistency between forward-looking technological optimism and backward-looking disappointment. Both can simultaneously exist," especially during periods of transformative changes.

B. Evaluating the potential economic impact in terms of value creation and cost optimization 1. Real cases of successful implementations of LLMs for value creation 2. Real cases of successful implementations of LLMs for cost optimization C. Intangible capital - capital may not be reflected in the measurements of economic growth

3. Generalization Capabilities of LLMs as GPT

A. Examining the adoption rate of previous GPTs B. Key factors contributing to the widespread adoption of a technology as a GPT C. Reviewing the literature on the potential of AI as a GPT

4. LLMs vs. Artificial General Intelligence (AGI)

A. Understanding the difference between LLMs and AGI B. Exploring whether AGI is the real General Purpose Technology

5. Acknowledging Benefits and Limitations of LLMs as GPT

A. Discussing the potential benefits of LLMs as GPT B. Addressing the limitations and challenges associated with LLMs as GPT

6. Conclusion

A. Summarizing the main points discussed in the paper B. Emphasizing the potential of LLMs as GPT in reshaping industries

7. Bibliography styles

Here are two sample references: Feynman and Vernon Jr. (1963; Dirac, 1953).

By default, natbib will be used with the `authoryear` style, set in `classoption` variable in YAML. You can sets extra options with `natbiboptions` variable in YAML header. Example

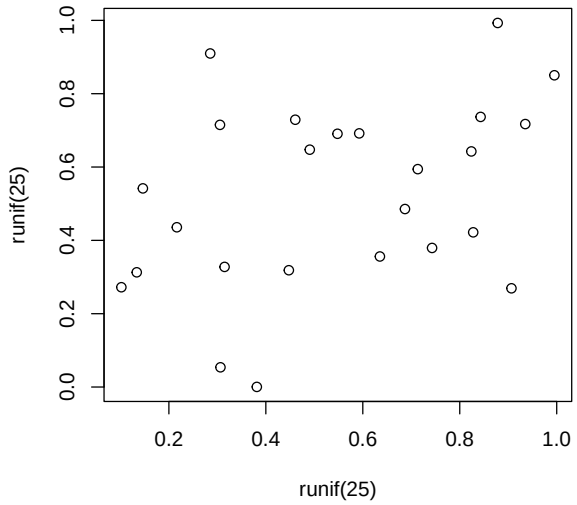

Figure 1: A meaningless scatterplot.

```
natbiboptions: longnamesfirst,angle,semicolon
```

There are various more specific bibliography styles available at `https://support.stmdocs.in/wiki/index.php?title=Model-wise_bibliographic_style_files`. To use one of these, add it in the header using, for example, `biblio-style: model1-num-names`.

7.1. Using CSL

If `citation_package` is set to `default` in `elsevier_article()`, then pandoc is used for citations instead of `natbib`. In this case, the `csl` option is used to format the references. Alternative `csl` files are available from `https://www.zotero.org/styles?q=elsevier`. These can be downloaded and stored locally, or the url can be used as in the example header.

8. Equations

Here is an equation:

$$f_X(x) = \left(\frac{\alpha}{\beta}\right)\left(\frac{x}{\beta}\right)^{\alpha-1} e^{-\left(\frac{x}{\beta}\right)^{\alpha}}; \alpha, \beta, x > 0.$$

Here is another:

$$a^2 + b^2 = c^2. \tag{1}$$

Inline equations: $\sum_{i=2}^{\infty}\{\alpha_i^{\beta}\}$

9. Figures and tables

Figure 1 is generated using an R chunk.

10. Tables coming from R

Tables can also be generated using R chunks, as shown in Table 1 for example.

```
knitr::kable(head(mtcars)[,1:4],
    caption = "\\label{tab1}Caption centered above table"
)
```

Table 1: Caption centered above table

	mpg	cyl	disp	hp
Mazda RX4	21.0	6	160	110
Mazda RX4 Wag	21.0	6	160	110
Datsun 710	22.8	4	108	93
Hornet 4 Drive	21.4	6	258	110
Hornet Sportabout	18.7	8	360	175
Valiant	18.1	6	225	105

References

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