

Review of: "A Perspective for Economic and Social Unfoldings of AI"

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Potential competing interests: No potential competing interests to declare.

Disclosure - I found the perspective unnecessarily cynical (eg the use of the expression, so-called AI), much like the works of the Dreyfus brothers, Roger Penrose and others in the early days of AI. Attacking strong AI was besides the point. I therefore enlisted Chat GPT and the following critique is the result. RSS, Abu Dhabi, 2-April-23

This is an article discussing the economic and social implications of Artificial Intelligence (AI) and how misleading terms and ideas about AI can have negative impacts. The article emphasizes the need for precision in defining and understanding AI concepts and suggests some directives to help investors and governments in AI-related initiatives. The article notes that AI is strongly connected to the knowledge economy, where the most valuable assets are intangible, such as people's skills, patents, copyrights, and accumulated knowledge. The article argues that AI initiatives should follow fundamental conditions to be successful and that the labeling of AI concepts should be precise and accurate. The article concludes by suggesting that there is a need for more clarity and transparency in AI-related decision-making processes.

Section 3 delves into the central themes of the paper and discusses various premises for a successful path towards the implementation of good quality AI products. The first premise is related to the educational and social dimensions of AI. The author suggests that in order to have well-prepared developers, companies should "open channels" with universities and offer student or research grants to recruit just-graduated people and complement their training inside the workplace. Additionally, the availability of specialists in data preparation and model validation and testing is necessary. The author also emphasizes the importance of certain internal social actions, such as reinserting workers in new positions by means of adequate training and adaptation, to avoid firing them when their functional activities are no longer required due to the implementation of AI-based products.

The second premise discussed in this section is related to the commercial and strategic dimensions of AI. The author suggests that establishing an appropriate AI infrastructure may be time-consuming and costly for most firms. Some vendors in the AI market argue that there are services and products available and ready to make new developments accessible and affordable to all firms. However, the author emphasizes the importance of maintaining operational and intellectual independence to protect the technical information generated, which constitutes the most important asset to be protected and coupled to the survival of the enterprise.

The third premise discussed in this section is related to scientific and technological directives. The author emphasizes the importance of reducing waste of resources to a minimum, including computer processing time and associated energy,

needed to keep devices working well. The author suggests that constructing code based on very efficient models, algorithms, and programming tools is natural and ecological premises should be respected. Additionally, the author highlights the availability of thousands of good quality, free and open-source mathematical software libraries that are typically written in C/C++, which is considered good for the construction of applications demanding high processing performance.

Overall, the section provides useful insights into the educational, social, commercial, strategic, scientific, and technological dimensions of AI. The author emphasizes the importance of having well-prepared developers, maintaining operational and intellectual independence, and reducing waste of resources to a minimum. The section could be improved by providing more specific examples and references to support the arguments presented.

The final section discusses two mature fields of knowledge: fuzzy logic and global optimization. Fuzzy logic is a revolutionary field of applied mathematics that allows computer programs to mimic inferential human abilities, and it is based on the concept of a fuzzy set. By using fuzzy sets and operations between their elements, it is possible to design fuzzy inference systems (FISs) capable of approximating the behavior of multiple input/multiple output systems. Most well-known and successful applications of FISs are in pattern recognition, instrumentation, signal processing, control engineering, and decision making, among others. Initiatives in using or producing items based on fuzzy logic may give back good results, considering that it features a mature set of techniques and good conditions of interpretability for the structure of rule bases.

On the other hand, the interest in machine learning lies mainly in its capability to process very large data sets, producing a final model capable of making inferences about several types of problems. It has much in common with traditional statistical inference, and depending on the approach, it may be difficult to explain why the final trained model converged to that specific configuration. Global optimization is also a mature area of knowledge, and it consists of finding the global minimum (or maximum) of a function over a given set of variables. Evolutionary global optimization is a subfield of global optimization, which is based on the principles of natural selection, and it involves generating new candidate solutions through genetic operators.

Post Script - So, should users and research pay heed to Stephan Hawking's warning that AI marks the beginning of the end of homo sapiens or should we draw inspiration from Bill Gates excitement that the real age of AI has just began and will solve our pressing problems? My PoV is that since the agricultural revolution, we have become a species known as homo faber - mankind as the creator and user of tools for survival. AI is but a continuation of this trend.