

Call for papers for Revista da UFMG

V. 30, 2023

Theme: Intelligence and Artificial Intelligence

Submission deadline: September 7, 2023

The XXI was greeted as the century of biology. Craig Venter and Daniel Cohen (2004) formulated this idea “If the 20th century was the century of physics, the 21st century would be the century of biology. While combustion, electricity, and nuclear power defined scientific advance in the last century, the new biology of genome research – which will provide the complete genetic blueprint of a species, including the human species – will define the next”. Biology has advanced tremendously in the last two decades and taken a large share in the development of science and industry. However, one might question if the recent advances in Artificial Intelligence, and its potential for transforming current practices in society, do not challenge the assumed certainly profound impact of biological sciences as the dominant research field. Evolving with ups and downs, since the last century, AI has shown its potential for interfering with decision-making and decisions in many aspects of human activity. Recent developments in natural languages challenge the old perception that machines’ replacement of human labor would be restricted to robots performing unsafe or tedious mechanical tasks. The recent pandemic brought changes in human practices that minimize the need for personal presence at the place of work, spreading exponentially work methods that were restricted to selected environments, providing an additional impulse to changes caused by AI.

Some underlying ethical questions involve the control of decision-making processes by algorithms that are proprietary and designed and known by a small number of huge conglomerates; the influence of the new division of work among nations and individuals, accelerating current trends of hyper wealth distribution concentration and exclusion; the risks of assigning decisions to machines and programs lacking human criteria and many other. Face recognition algorithms can already identify, for example, the entire group of four million subway users in a city such as São Paulo, as recently proposed as a tool for security (to “protect” users of the system) and barred after a court dispute. It should also be mentioned that the set of uncertainties regarding the impact of AI on society includes the possibility that there are deeper risks to humanity, linked to direct manipulation by machines of the very “operating system” on which our civilization is built: our language. Examples on a smaller scale of the type of difficulties that may be encountered are the algorithms of social networks, which have been impacting various aspects of our social organization in unexpected and poorly understood ways. Note that these algorithms are much simpler than the generalist AI that is now announced.

The Institute for Advanced Studies of Paris and the Institute for Advanced Transdisciplinary Studies (IEAT) of the

Federal University of Minas Gerais (UFMG) organized a project to discuss and articulate a group of researchers named Intelligence and Artificial Intelligence. Due to the COVID-19 crisis, the project was extended from 2020 to 2022. The relevance and depth of the discussions motivated us to propose and edit this number of the Revista da UFMG, for which we invite those interested in submitting their contributions.

The potential for transformation and improvements embedded in AI systems shows more and more applications. Recently developed natural language algorithms brought surprising new possibilities, from writing a judicial report to solving an exam, advancing towards the ability to write a computer language program for different specific applications. The AI revolution is part of a larger context of technologies that promote digital transformation in the world economy, industry, and governments - these digital transformation technologies, including AI, present risks and opportunities. The present challenge for society is to develop an environment where AI can be a tool to improve quality of life by impacting energy, food production, health and medicine, disaster response, justice, and politics.

This issue on the Intelligence and Artificial Intelligence theme will accept articles to discuss these positive and negative impacts, aspects and applications of AI technology, and reflections on all aspects of natural and artificial intelligence. The topics for this number are the development of the techniques today collectively treated as AI, its interfaces with neurosciences and cognitive sciences, transforming applications of AI in economic activities, ethical aspects and impacts in governance, labor, and automation of cognitive and intellectual tasks, control and freedom boundaries, government practices, health, and educational applications.

The articles must comply with the Norms for Publication available on the website of UFMG Journal, including a minimum of 17 and a maximum of 25 pages, including tables, maps, graphics, and other images and non-textual information. The articles written must be unpublished in Brazil and, preferably, address different perspectives within the proposed theme. The Revista da UFMG will accept submissions until September 7th, 2023. For norms and submissions, please click [HERE](#).

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Universidade Federal de Minas Gerais
Av. Presidente Antônio Carlos, nº 6.627, Campus Pampulha
CEP: 31.270-901, Belo Horizonte – Minas Gerais – Brasil
Outras informações: 55 31 3409 4123
Website: <https://periodicos.ufmg.br/index.php/revistadaufmg>

