



UNIVERSIDADE FEDERAL DO RIO GRANDE
INSTITUTO DE LETRAS E ARTES
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DE TEXTOS EM LÍNGUA ESTRANGEIRA

LÍNGUA INGLESA - 18 DE NOVEMBRO DE 2023

Número de inscrição:

Tempo para a realização da prova: 2 horas e 30 minutos

Divulgação do resultado da prova: 22 de novembro de 2023

- Para cada questão objetiva, há apenas uma resposta correta.
- As respostas dissertativas, sempre referentes ao texto-base, devem ser redigidas em língua portuguesa e no limite das linhas.
- Questões rasuradas e/ou com caligrafia ilegível não serão corrigidas. Não é aconselhado o uso de corretivo líquido.
- Usar caneta azul ou preta.
- Dicionários impressos - monolíngues ou bilíngues - podem ser consultados. Dicionário *on-line* e outros equipamentos eletrônicos não são permitidos.
- Não é permitido emprestar material nem pedir emprestado.
- Ao final, o candidato pode levar o texto-base e o papel almaço.

Why Quantum Computing Is Even More Dangerous Than Artificial Intelligence

The world already failed to regulate AI. Let's not repeat that epic mistake.

By Vivek Wadhwa and Mauritz Kop - AUGUST 21, 2022

01 Today's artificial intelligence is as self-aware as a paper clip. Despite the hype—
02 such as a Google engineer's bizarre claim that his company's AI system had “come to
03 life” and Tesla CEO Elon Musk's tweet predicting that computers will have human
04 intelligence by 2029—the technology still fails at simple everyday tasks. *That* includes
05 driving vehicles, especially when confronted by unexpected circumstances that require
06 even the tiniest shred of human intuition or thinking.

07 The sensationalism surrounding AI is not surprising, considering that Musk himself
08 had warned that the technology could become humanity's “biggest existential threat” if
09 governments don't regulate *it*. But whether or not computers ever attain human-like
10 intelligence, the world has already summoned a different, equally destructive AI
11 demon: Precisely because today's AI is little more than a brute, unintelligent system for
12 automating decisions using algorithms and other technologies that crunch superhuman
13 amounts of data, its widespread use by governments and companies to surveil public
14 spaces, monitor social media, create deepfakes, and unleash autonomous lethal
15 weapons has become dangerous to humanity.

16 Compounding the danger is the lack of any AI regulation. Instead, unaccountable
17 technology conglomerates, such as Google and Meta, have assumed the roles of judge
18 and jury in all things AI. *They* are silencing dissenting voices, including their own
19 engineers who warn of the dangers.

20 The world's failure to rein in the demon of AI—or rather, the crude technologies
21 masquerading as such—should serve to be a profound warning. There is an even more
22 powerful emerging technology with the potential to wreak havoc, especially if it is
23 combined with AI: quantum computing. We urgently need to understand this
24 technology's potential impact, regulate it, and prevent it from getting into the wrong
25 hands before it is too late. The world must not repeat the mistakes it made by refusing
26 to regulate AI.

27 Although still in its infancy, quantum computing operates on a very different basis
28 from today's semiconductor-based computers. If the various projects being pursued
29 around the world succeed, these machines will be immensely powerful, performing
30 tasks in seconds that would take conventional computers millions of years to conduct.
31 Semiconductors represent information as a series of 1s and 0s—that's why we call it

32 digital technology. Quantum computers, on the other hand, use a unit of computing
33 called a qubit. A qubit can hold values of 1 and 0 simultaneously by incorporating a
34 counterintuitive property in quantum physics called superposition. (If you find this
35 confusing, you're in good company—it can be hard to grasp even for experienced
36 engineers.) Thus, two qubits could represent the sequences 1-0, 1-1, 0-1, and 0-0, all
37 in parallel and all at the same instant. That allows a vast increase in computing power,
38 which grows exponentially with each additional qubit.

39 If quantum physics leaves the experimental stage and makes it into everyday
40 applications, it will find many uses and change many aspects of life. With their power to
41 quickly crunch immense amounts of data that would overwhelm any of today's
42 systems, quantum computers could potentially enable better weather forecasting,
43 financial analysis, logistics planning, space research, and drug discovery. Some actors
44 will very likely use them for nefarious purposes, compromising bank records, private
45 communications, and passwords on every digital computer in the world. Today's
46 cryptography encodes data in large combinations of numbers that are impossible to
47 crack within a reasonable time using classic digital technology. But quantum
48 computers—taking advantage of quantum mechanical phenomena, such as
49 superposition, entanglement, and uncertainty—may potentially be able to try out
50 combinations so rapidly that they could crack encryptions by brute force almost
51 instantaneously.

52 To be clear, quantum computing is still in an embryonic stage—though where,
53 exactly, we can only guess. Because of the technology's immense potential power and
54 revolutionary applications, quantum computing projects are likely part of defense and
55 other government research already. This kind of research is shrouded in secrecy, and
56 there are a lot of claims and speculation about milestones being reached. China,
57 France, Russia, Germany, the Netherlands, Britain, Canada, and India are known to be
58 pursuing projects. In the United States, contenders include IBM, Google, Intel, and
59 Microsoft as well as various start-ups, defense contractors, and universities.

60 Despite the lack of publicity, there have been credible demonstrations of some basic
61 applications, including quantum sensors able to detect and measure electromagnetic
62 signals. One such sensor was used to precisely measure Earth's magnetic field from
63 the International Space Station.

64 In another experiment, Dutch researchers teleported quantum information across
65 a rudimentary quantum communication network. Instead of using conventional optical

66 | fibers, the scientists used three small quantum processors to instantly transfer quantum
67 | bits from a sender to a receiver. These experiments haven't shown practical
68 | applications yet, but they could lay the groundwork for a future quantum internet, where
69 | quantum data can be securely transported across a network of quantum computers
70 | faster than the speed of light. So far, that's only been possible in the realm of science
71 | fiction.

Disponível em: <https://foreignpolicy.com/2022/08/21/quantum-computing-artificial-intelligence-ai-technology-regulation/>.

Acesso em: 29 set. 2023. (Adaptado)

1. De acordo com o subtítulo do texto, estaríamos repetindo um erro do passado ao:

- a) não regulamentar o uso da Inteligência Artificial
- b) coibir o avanço do uso da Inteligência Artificial
- c) coibir o avanço do uso da Computação Quântica
- d) não regulamentar o uso da Computação Quântica

2. Qual o grau de comparação expresso pelos autores na primeira frase do texto (linha 1)?

- a) superioridade
- b) positividade
- c) igualdade
- d) inferioridade

3. Sem prejuízo de sentido, "threat" (linha 8) pode ser traduzido por:

- a) ameaça
- b) prejuízo
- c) perigo
- d) adversidade

4. Conforme Wadhwa e Kop, que aspectos da vida cotidiana poderiam ser alterados com o uso da tecnologia oferecida por computadores quânticos?

- a) previsão do tempo, análise financeira, educação ambiental
- b) previsão do tempo, análise financeira, planejamento logístico
- c) análise financeira, pesquisa farmacêutica, educação ambiental
- d) análise financeira, planejamento logístico, educação ambiental

5. A que se referem os pronomes "That" (linha 4), "it" (linha 9) e "They" (linha 18)?

- a) dificuldades da tecnologia em lidar com tarefas simples, condução de veículos, conglomerados tecnológicos
- b) condução de veículos, inteligência artificial (AI), conglomerados tecnológicos
- c) dificuldades da tecnologia em lidar com tarefas simples, tecnologia, conglomerados tecnológicos
- d) dificuldades da tecnologia em lidar com tarefas simples, inteligência artificial (AI), condução de veículos

6. Quais os usos da inteligência artificial que tem se mostrado perigosos à humanidade?

- a) amplo uso pelos governos e companhias para fiscalizar espaços públicos, monitorar as mídias sociais, propagar informações falsas e liberar de forma irrestrita armas letais autônomas
- b) monitorar as mídias sociais, propagar informações falsas, amplo uso pelos governos e companhias para vigiar espaços públicos, e liberar de forma irrestrita armas letais autônomas
- c) monitorar as mídias sociais, criar informações falsas, e liberar de forma irrestrita armas letais autônomas e amplo uso pelos governos e companhias para fiscalizar espaços públicos
- d) amplo uso pelos governos e companhias para vigiar espaços públicos, monitorar as mídias sociais, criar informações falsas e liberar de forma irrestrita armas letais autônomas.

Número de inscrição:

Nota final (a ser preenchida pela banca):

CIRCULE A ALTERNATIVA CORRETA EM CADA QUESTÃO

1.	A	B	C	D
2.	A	B	C	D
3.	A	B	C	D
4.	A	B	C	D
5.	A	B	C	D
6.	A	B	C	D

ESCREVA ABAIXO AS RESPOSTAS DE CADA QUESTÃO DISSERTATIVA

7. Quais as três coisas que os autores do texto afirmam que devemos entender urgentemente?

8. O que é dito sobre os experimentos dos pesquisadores holandeses?

9. O que é revelado pelos autores sobre sensores quânticos?

10. Qual é a posição atual dos autores sobre a seguinte informação: “dados quânticos podem ser seguramente transportados através de uma rede de computadores quânticos mais rapidamente do que a velocidade da luz”?
