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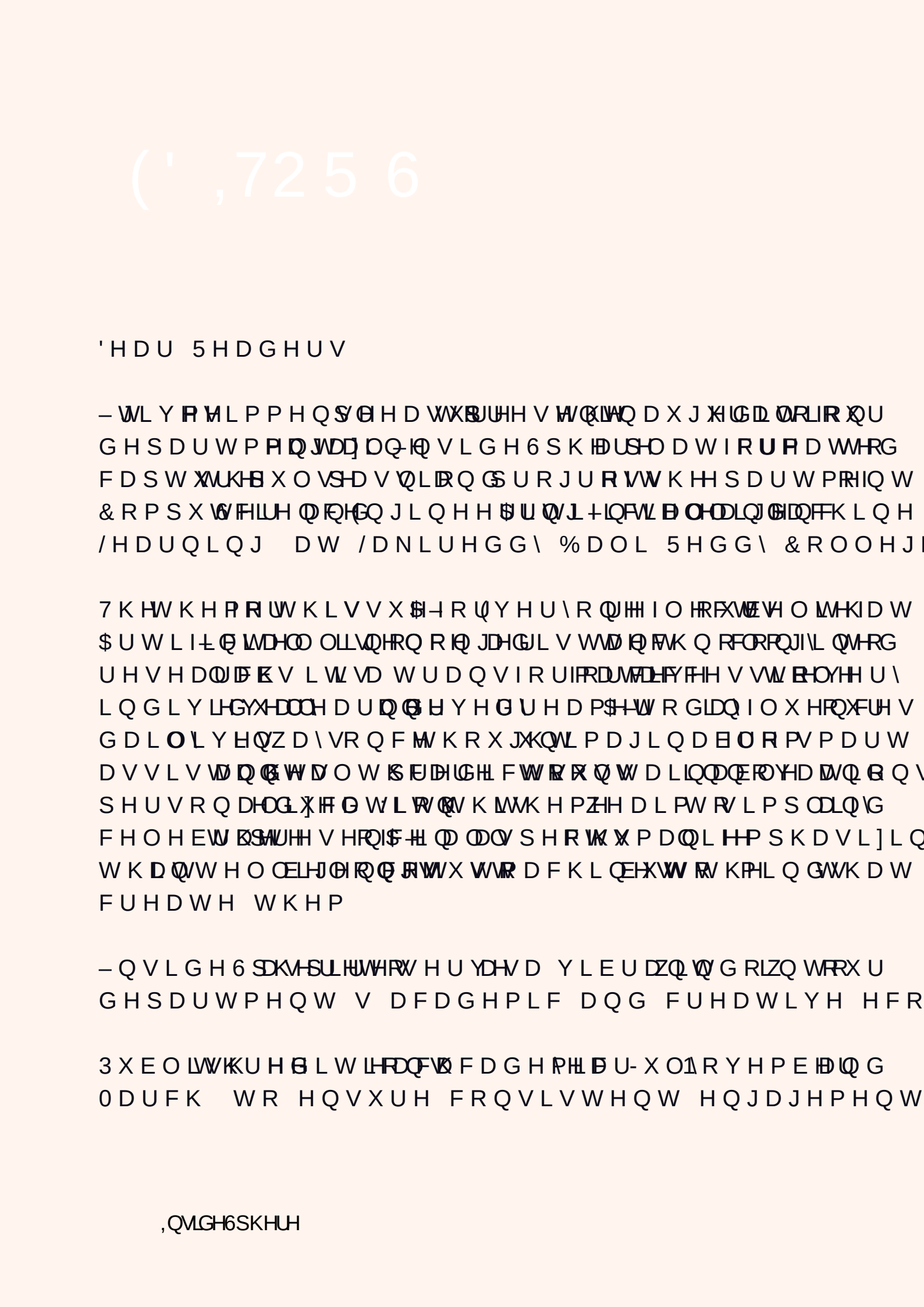
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$V ZH RSHQ WKH SDJHV RI –QVLGH6SKHUH OHWXV FHOHEUDWH WKH FRQHFWLYH DFKLHYHP HQW RI RXU IDFXOW DQG VWXGHQW ZKR FRQWULQXRXVO VWULYH IRU H[FHOHQFH 7KLV P DJD] LQH ZLOOEH SXEOLVKHG WKUHH WP HV HYHU\ DFDGHP LF \HDU LQ -XO 1RYHP EHU DQG 0DUFK SURYLGLQJ XSGDWHV RQ GHSDUWP HQWDO HYHQW UHVHDUFK DFFRP SOLVKP HQW DQG FUHDWLYH H[SUHVVLRQV

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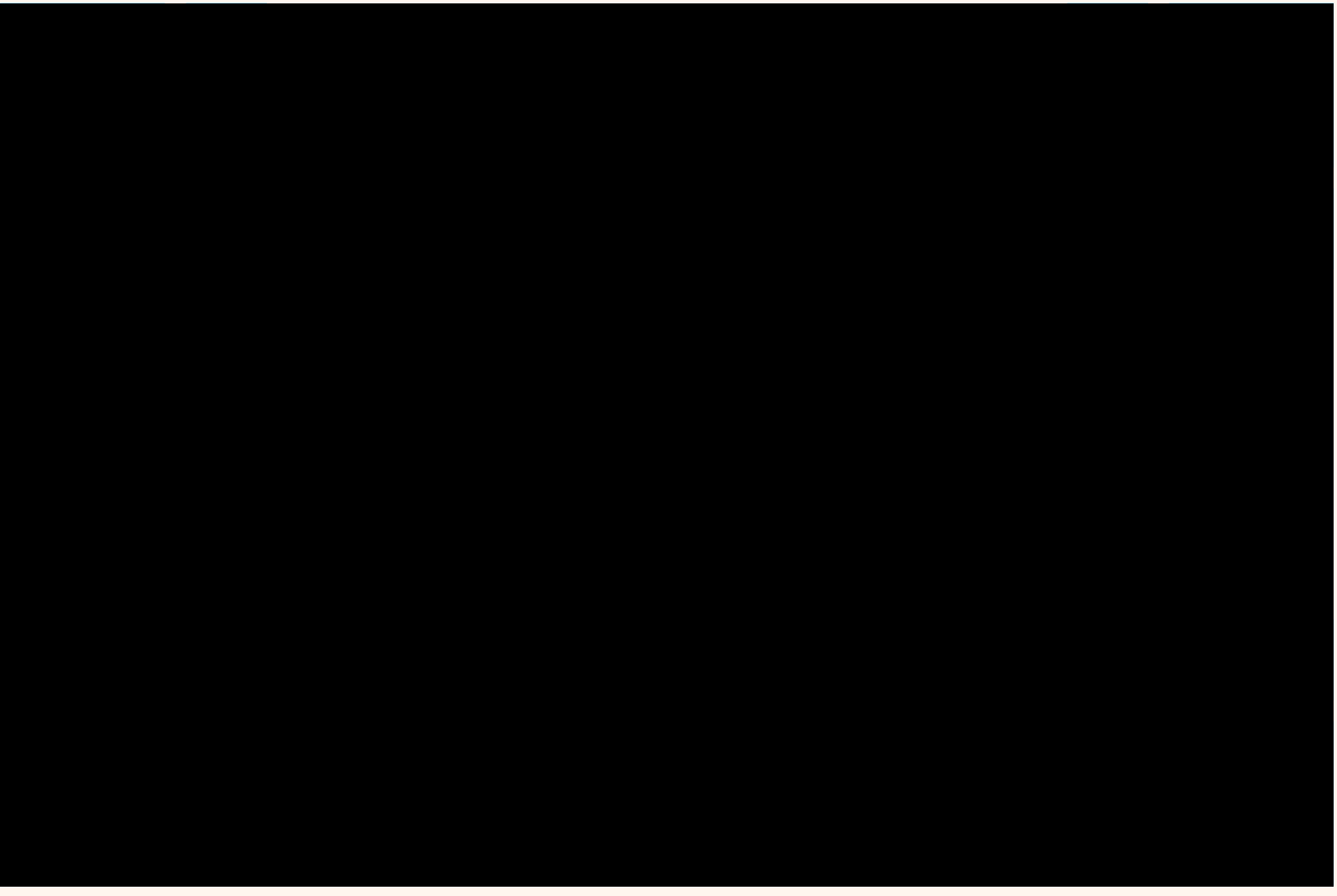

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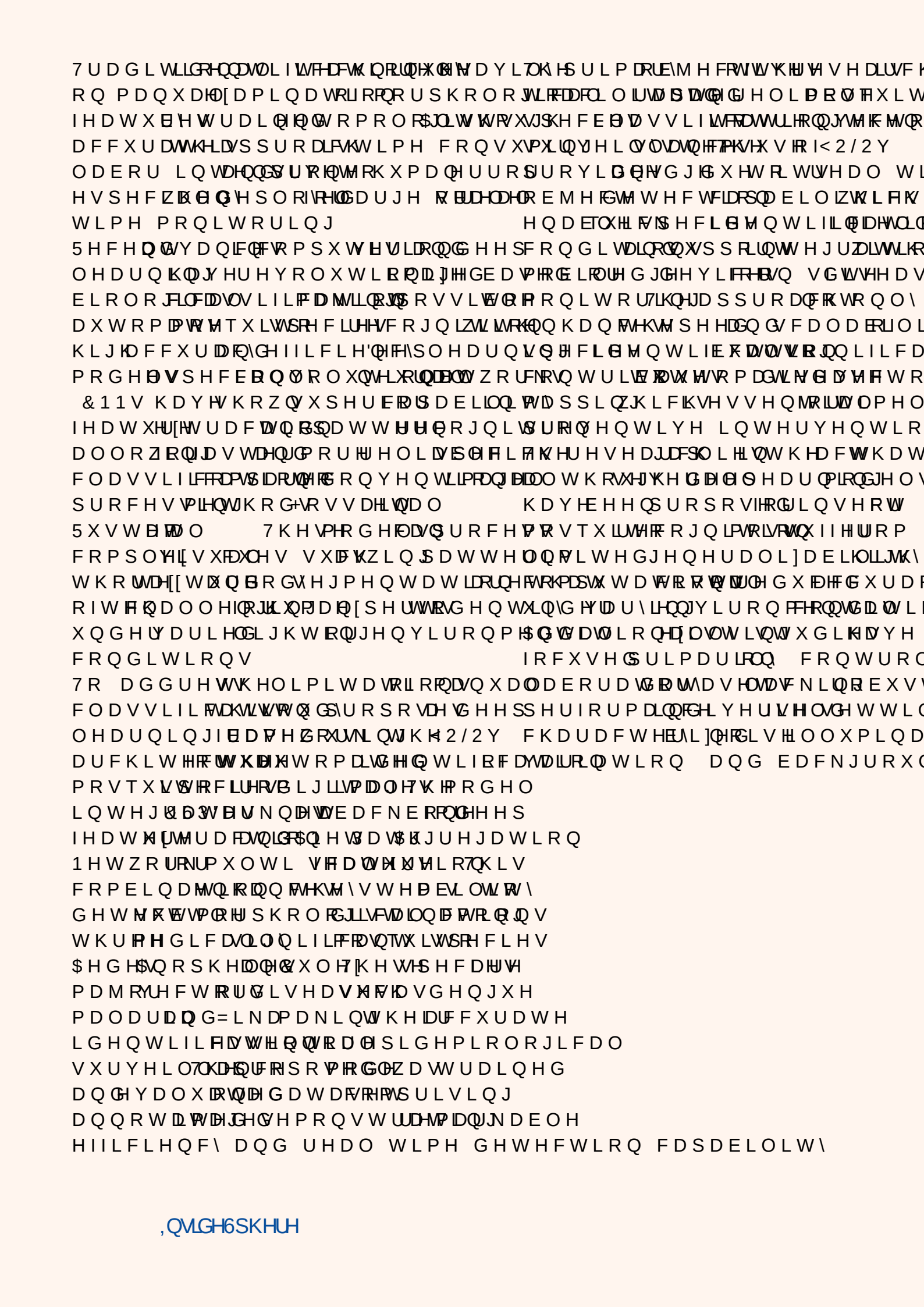

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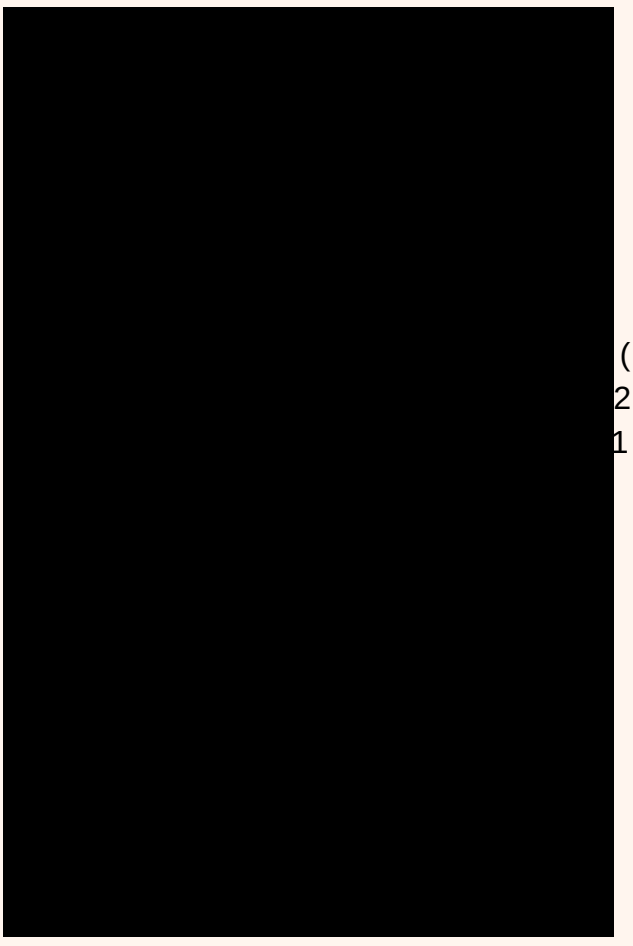

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$OORI VXGGHQ KHUH LV WKH RQH WKLQJ WKDWL REVHUYHG LQ WKH SDVW)RUP HUO , KDYH JRQH WKURXJK WKH XVDJH RI WKH $, WRROFDOOHG * (0 ,1 , DV L UHDFKHG WKH GDLOOP LWRU &+$7 * 37 7KHQ , REVHUYHG WKDWWKH * HP LQL LV JHQHUDWQJ WKH FRQWHQWVDN YHU QRUP DODQG VP SOH DQG LW DN DP RVWLUHVSHFWYH RI WKH ZD\ RU WKH HP RWRQ WKDWZ H JLYHQ WKH SURP SWZ KHQ FRP SDUHG WR WKH &KDW37 7KHQ L WDWUWG GLVFXVLQJ LWZ LWK P\ IUHQG VHDUFKLQJ UHDGLQJ VRP H DUWF0HV HW7 7KHQ L FDP H WR NQRZ WKDW WKH IDVFLQDWQJ WHFKQRORJ\ EHKLQG WKLV HP RWRQDO$,

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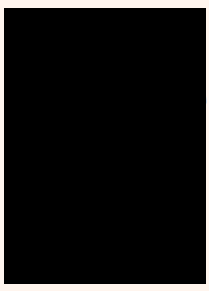

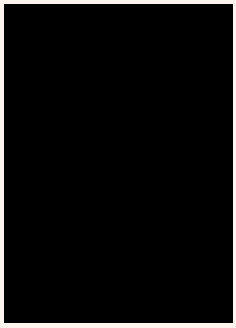

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Brain E-Tattoos: The Next Frontier in Wearable Tech

Article By

M. MEGHANA (23761A4233)

CH. MANI PRATYUSHA (23761A4211)

INTRODUCTION

Neuroscience and engineering are converging to create smart scalp tattoos that can read brain signals in real time. Also known as electronic tattoos or epidermal electronics, these ultra-thin, flexible devices blend science and skin, offering a sleek, non-invasive alternative to bulky medical equipment like traditional EEG caps. They are designed to monitor brain activity by detecting the tiny electrical signals, or brainwaves, that the brain sends out.

HOW THEY WORK

Brain e-tattoos contain miniature sensors and electrodes made from conductive and biocompatible materials like graphene or soft metals. These tattoos are applied to the scalp like a temporary tattoo and stick comfortably, even over hair, feeling like a second skin.

The sensors pick up brainwave signals through the scalp, similar to an EEG, but without the need for sticky gels or a wired cap. The data is then sent wirelessly to a device, such as a smartphone or computer, for real-time analysis. This analysis can detect patterns related to sleep, focus, stress, or seizures.

ADVANTAGES OVER TRADITIONAL METHODS

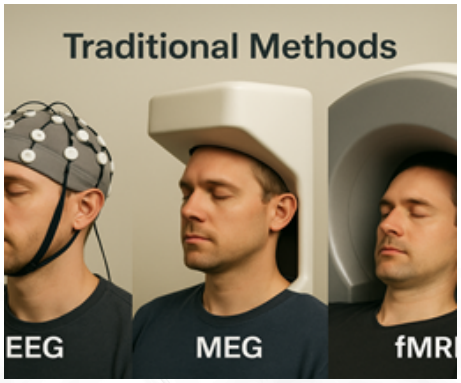
For years, brain monitoring relied on bulky, rigid equipment that was uncomfortable and difficult for continuous use.

Traditional methods include:

- Electroencephalography (EEG): Uses metal electrodes on the scalp to detect electrical signals from neurons and is commonly used to diagnose epilepsy and monitor brain functions.
- Magnetoencephalography (MEG): Measures magnetic fields from brain activity and offers high speed and precision, but is costly and requires a special, shielded setup.
- fMRI: Tracks brain activity by measuring changes in blood flow. It provides high spatial resolution but has poor temporal resolution, is expensive, and requires the subject to remain still in a loud, confined scanner.

E-tattoos offer a superior alternative due to several key features:

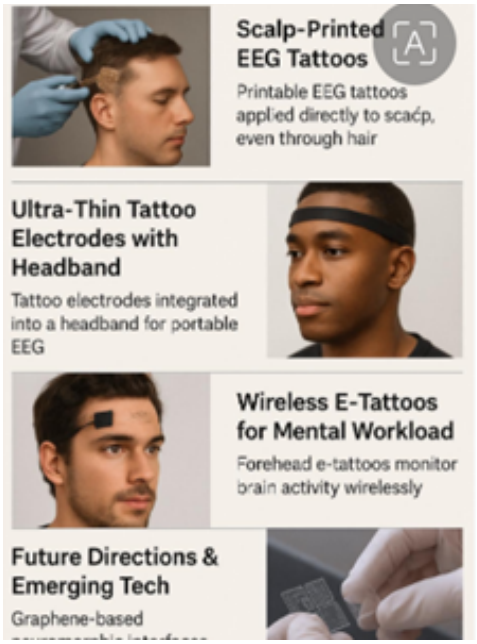
- Comfort and Flexibility: They are ultra-thin and flexible, making them comfortable for long-term, continuous wear.
- Wireless Monitoring: They eliminate bulky equipment and tangled wires, providing a more user-friendly experience.
- Accuracy: They can accurately detect EEG signals, movement, and even temperature.
- Portability: They enable brain monitoring outside of clinical settings, in everyday environments.



APPLICATIONS AND FUTURE POSSIBILITIES

The applications for this technology are vast and span multiple fields:

- Medical Use: E-tattoos can be used to monitor epilepsy, sleep disorders, and brain injuries, aiding in neurological diagnosis and therapy.
- Brain-Computer Interfaces (BCIs): They can control digital devices using brain signals, and are already being used in research and assistive technology.
- Mental Wellness: In the future, these devices could be used to understand our thoughts and feelings and could enhance gaming,



CONCLUSION

Scalp tattoos represent a paradigm shift in neuroscience and healthcare. They offer a comfortable, user-friendly way to monitor brain activity, revolutionizing neurotechnology and empowering people to understand their mental and cognitive states in everyday life. With continued innovation and responsible use, they have the potential to reshape healthcare, entertainment, and personal well-being, proving that the next big thing in tech might just be skin-deep.

ETHICAL CONSIDERATIONS

As this technology advances, it's crucial to address ethical and privacy concerns. Since these tattoos collect sensitive brain data, ensuring secure storage, data ownership, and informed consent is essential. The long-term use of these devices raises questions about data ownership, misuse, and ethical boundaries.

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వినిపిస్తావు దూరానవున్నవారి వాణి
వీనులవిందుగా మోగిస్తావు సరాగాల వేణి
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కృతార్థులని జేస్తుంది నీ కృత్రిమ మేధా ప్రవాహి
చుక్కానివలె సాయపడుతుంది నీ గూగుల్ పటాల రూపాలి
కళలను పోషిస్తుంది నీ సామాజిక మాధ్యమ వేదీ
ఇంకా చెబుతూపోతే సాగుతుంది నీ ఘనతా వాహిని

జనులందరు నీకు అతుకుతున్నారు అయస్కాంతము వలె
అవసరముకు నిన్ను కొని వదలలేకున్నారు వ్యసనము వలె

వీడియో గేమ్స్‌తో వికటిస్తున్నాయి మెదడులు
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రీల్స్, షార్ట్స్, స్నాప్స్ అంటూ తిప్పలేకున్నారు తలలు తెరనుండి
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చాపకింద నీరులా కబళిస్తున్నావు జీవన విధానాలను
కనుమరుగు చేస్తున్నావు శాస్త్రీయ పద్ధతులను

"ఇకనైనా తెలుసుకొనవలెను దీని నిజస్వరూపము
వాడుకోవాలి కేవలము ఆవశ్యకతకు"

Article By
N Sri Gowri Naga Hymavathi
23761A42A3
3rd year, B section

Special Edition

Is the advancement of artificial intelligence (i.e., science and technology)

BENEFICIAL FOR MANKIND? HAZARDOUS?

Author

Dr. B. Srinivasa Rao

SCIENTISTS FOR SOCIETY

I'm bringing up these issues in the context of the advancement of artificial intelligence on the one hand, and job loss and the psychological distress on the other. Who gains from the development of artificial intelligence (in terms of scientific and technological advancement)? If it is hazardous, who does it harm? If we base our responses to these questions solely on the data in front of us and then make an opinion or take a decision, we will be very incorrect. Because of the statement of a philosopher/philosopher who remarked, "If everything we see with our eyes and know is true, then science is pointless."

But first, let's look at some more concerns. Let us think.

1. Is stopping the advancement of science and technology an acceptable idea?
2. Do science and technology restrict human progress? Or do they make humans' jobs easier?
3. Should we resist science and technology when they make our jobs easier? Or should we apply that science and technology?
4. Should we resist the factors or this system that are eliminating existing employment, not creating new jobs, increasing profits with very few jobs, and gravely harming 90% of those who rely on jobs/work for a living?
5. Should we blame science and technology? Or should we stand against those who have control over scientific and technological developments, stopping them from reducing working hours and disseminating results to all fellow humans in a way acceptable to developed science and technology?
6. Are they the questions we face today?

After the layoff of 12,000 TCS employees, there is more discussion regarding the possible future of AI and IT employees. The argument has grown in the context of around 380 enterprises, ranging from start-ups to multinational corporations, laying off 78,000 people (the actual figure may be higher).

What if the advancement of artificial intelligence accelerates...?

1. What will the future look like for IT employees?
2. What will the future promise for not only IT professionals, but also AI, other IT-related sectors, and the conditions of employment in them?

Because we recently seen two developments.

- We have seen a hospital that is fully "medically staff-free and treats 3000 patients a day" with no doctors, nurses, or paramedical employees.
- We've also seen a "shopping mall" that has started to operate completely with robots, removing the need for people to work.

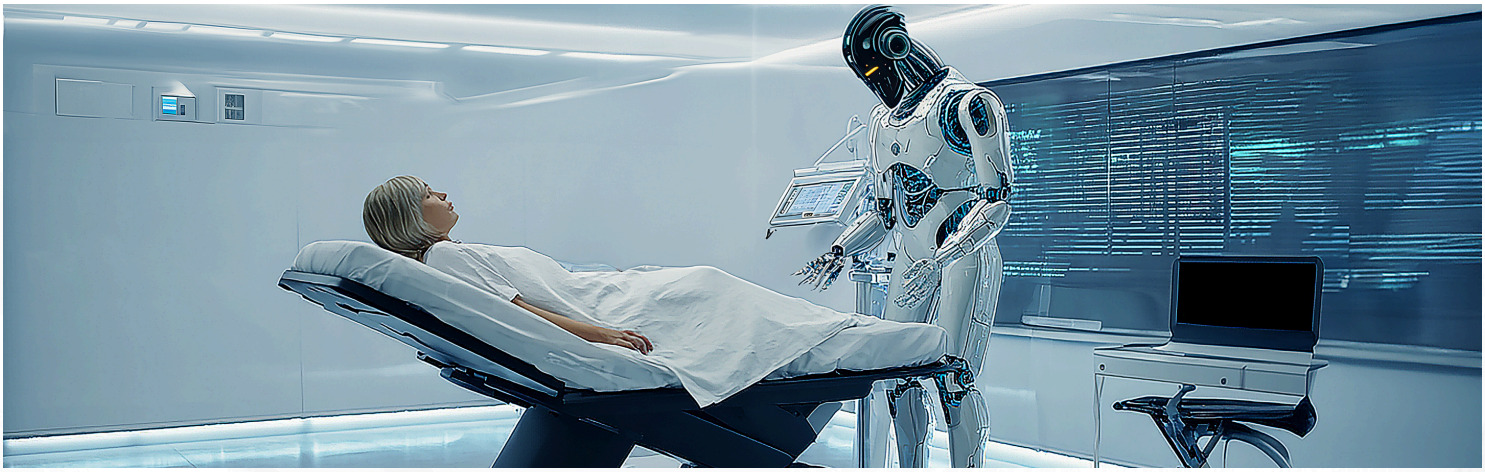
The world is amazed by these two innovations. However, if hospitals without doctors, nurses, or paramedical staff become usual, what will the future hold for today's medical personnel? Similarly, if there are no employees in shopping malls, what will happen to the millions of individuals who work in them?

If we do not think rationally about this issue, we may get into the trap of believing that artificial intelligence or the advancement of science and technology is harmful to humankind and that it would be better if it did not exist.

History has shown that such crises occur every decade in a capitalist system where profits are essential. It is critical to understand how artificial intelligence influences the current issue. That is why crises cannot be resolved without this framework. That is why we are working long-term to abolish this system....

These things need to be completed as soon as possible.

- The working day should be limited to 6 hours per day. Thus, instead of 8 hours and 3 shifts, all companies will have to run 6 hours and 4 shifts. This will create new posts. The unemployed will get jobs. The work pressure of employees/workers will decrease.



Another invention, "artificial pregnancy," is also being discussed. We see people talking about the damage to the relationship between mother and child. But at the same time, the department of gynecology is almost disappearing! Moreover, the costs of raising a child in the womb and giving birth to a child are decreasing, and days are coming when women will not need maternity leave at all. Therefore, this progress in science and technology should be examined from two angles. The results of science and technology are not available to everyone. Those who have made that science and technology their own are reaping the benefits.

As philosophers say, science and technology are the collective wealth of human society. Its results should be available to everyone. That is not happening, because we are in a system that benefits a few.

- The minimum wage/salary should be fixed at 30 thousand and implemented. It should be increased appropriately every year. There should be assurance for retirement life after long service.
- For this to be possible..... as Oxfam says, investors should reduce their profits. If they are not ready to do that work, then that pressure should come from the working class.
- The Andhra Pradesh state government, while increasing the 8-hour working day achieved by the workers in 1886, and allowing overtime (up to approximately 13 hours per day)
- 5. Recognizing that all political parties are united in the imposition of these laws on us, we must recognize the need to build a working class party that works for us. Only then will a new system be possible. We can free science and technology, which is captive in the hands of the capitalists. Instead of being afraid of and opposing the development of science and technology, we can all take its results.

We all need to understand this in the right direction, the responsibility lies with us, and we appeal to analyze this scientifically..... Thank you.

Dr. Sk. Salma Asiya Begum was honored with the Best Teacher Award on t
Teachers' Day in September, in recognition of her outstanding contributions
and dedication to academic excellence.

Congratulations!

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