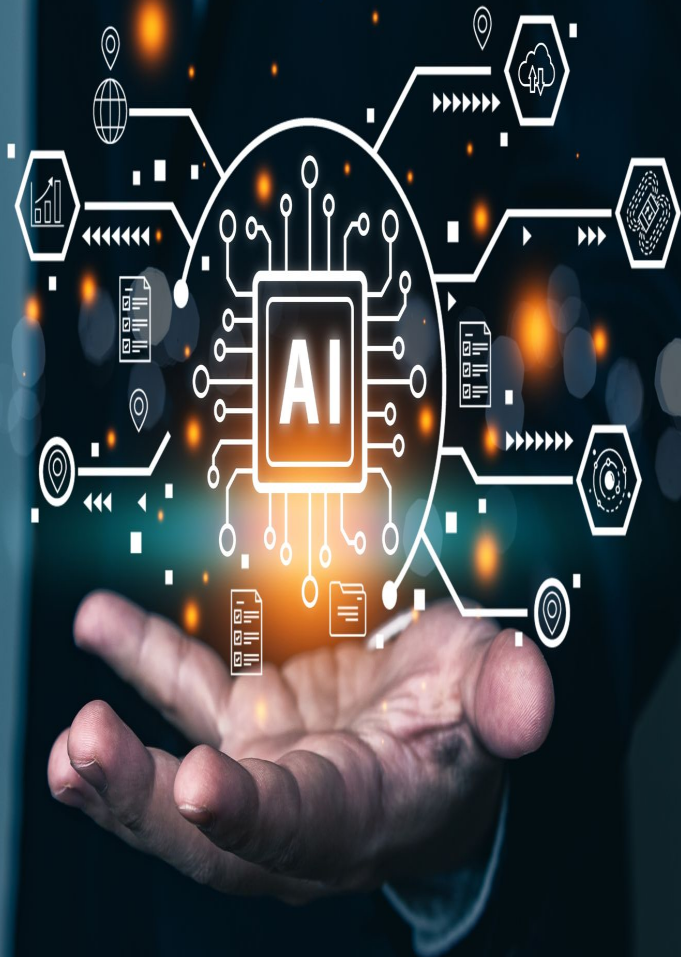




# **IMPACT OF ARTIFICIAL INTELLIGENCE ON DIGITAL TRANSFORMATION OF HIGHER EDUCATION: CHALLENGES AND PROMISES**

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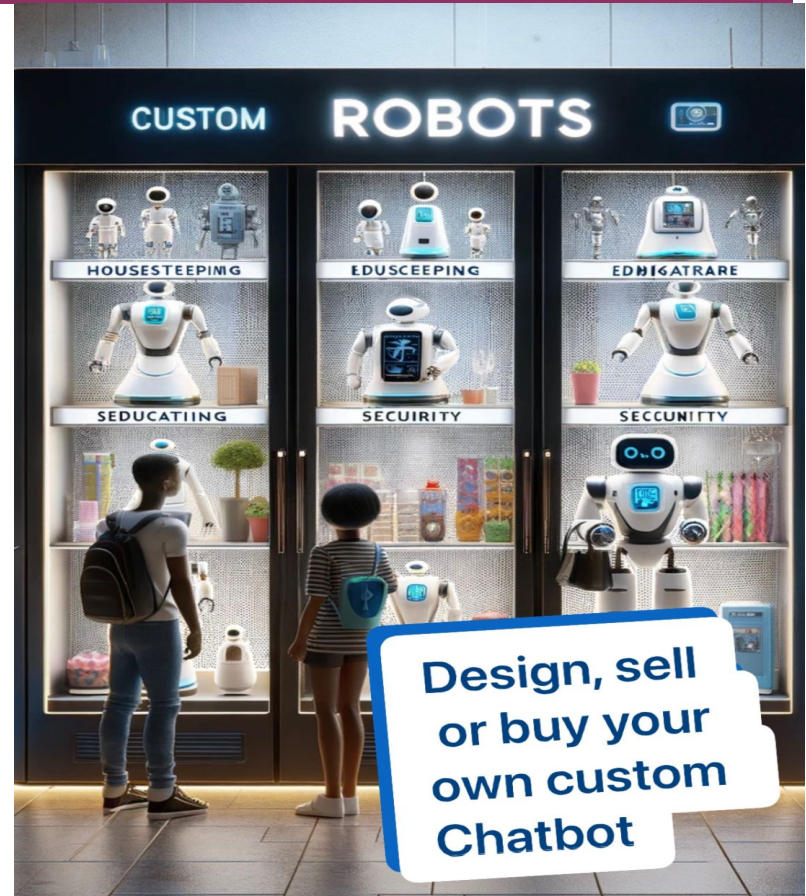
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# INTRO ...

- **“YOU CAN HAVE A JOB IF YOU WANTED TO HAVE A JOB FOR PERSONAL SATISFACTION. BUT THE AI WOULD BE ABLE TO DO EVERYTHING.” (Musk, 2023)**



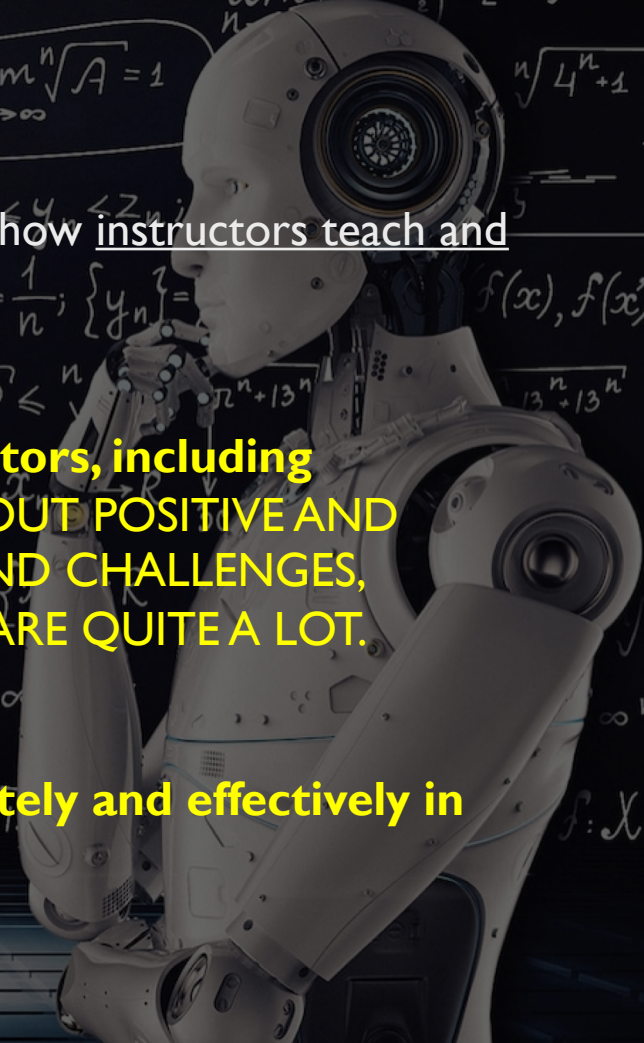
# INTRO ...

**“I EXPECT AI TO BE CAPABLE OF SUPERHUMAN PERSUASION WELL BEFORE IT IS SUPERHUMAN AT GENERAL INTELLIGENCE, WHICH MAY LEAD TO SOME VERY STRANGE OUTCOMES. (Altman, 2023)**

- According to Bozkurt (Bozkurt, 2023) “humanity is experiencing **a storm of change and transformation driven by technological developments**, with all of us situated in the midst of this storm” (p. 201).

# INTRO ...

- AI is **revolutionizing education** and changing how instructors teach and students learn.
- AI has the potential to **transform various sectors, including education**, but, at the same time **DEBATES ABOUT POSITIVE AND NEGATIVE INFLUENCES, OPPORTUNITIES, AND CHALLENGES, PROMISES AND THREATS FOR EDUCATION ARE QUITE A LOT**.
- So, there is a need **to regulate AI use adequately and effectively in education**.





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# What is Artificial Intelligence?



## WHAT IS ARTIFICIAL INTELLIGENCE?

- Artificial Intelligence (AI): The simulation of human intelligence processes by machines, especially computer systems.





WHY DIGITAL TRANSFORMATION?



# WHY DIGITAL TRANSFORMATION?

- AI has the potential to transform entire society (Tallberg et al., 2023) and **AI is expected to be embedded** into entire society very soon.
- Institutions must embrace digital transformation if they **wish to be change agents** in society and **remain competitive** (Benavides et al., 2020) and their success in the future **DEPENDS ON THE DIGITAL TRANSFORMATION** (Seres et al., 2018).
- Academic institutions **must undergo extensive digital transformation to meet the needs of today's students and prepare them for the digital world** they will face in the future (livari et al., 2020).

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# WHY DIGITAL TRANSFORMATION?



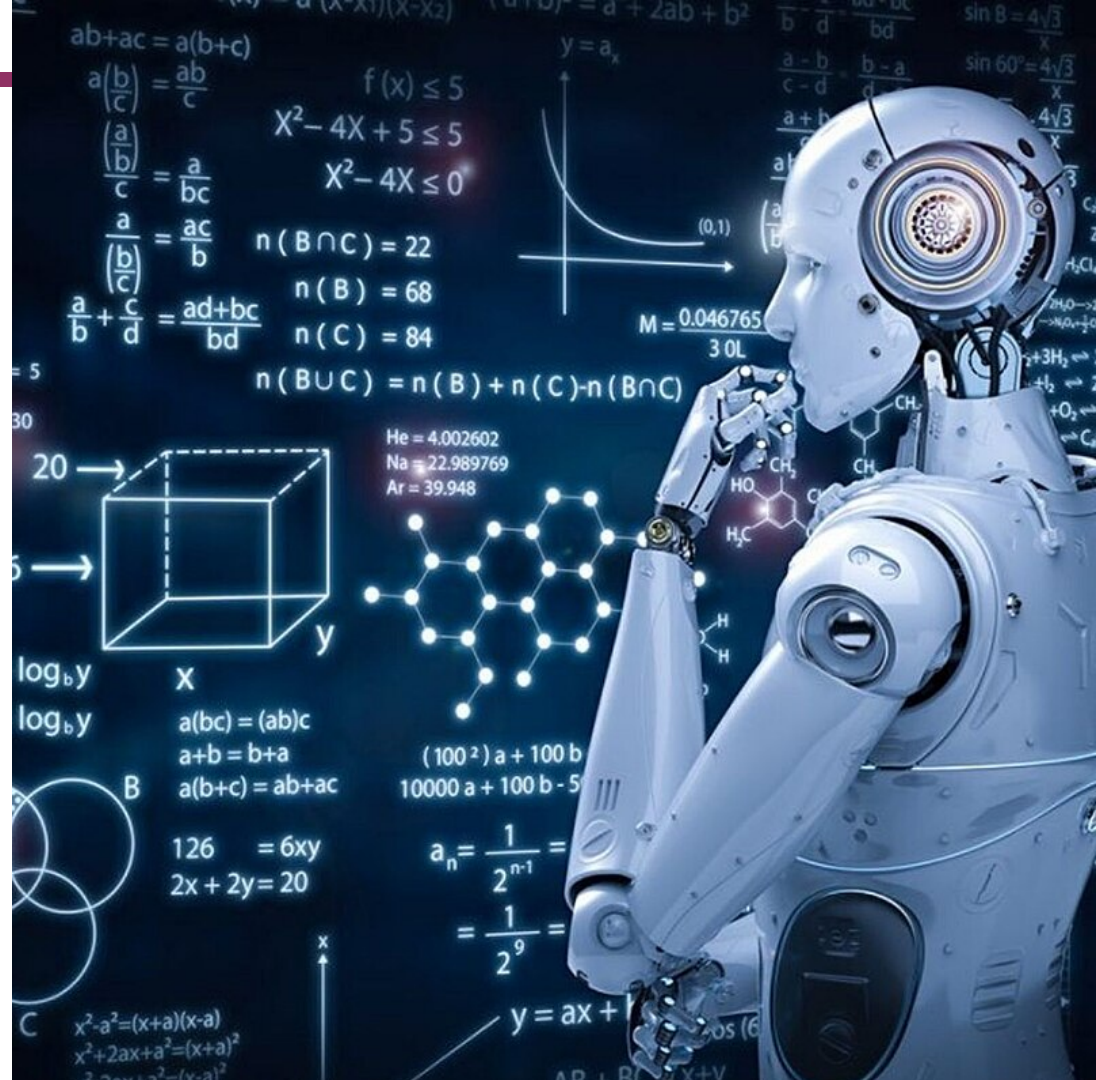
- That's why “*digital transformation in HEIs requires rethinking, restructuring, and reinventing, from its multi-purpose, multi-processes, multi-disciplinary, multi-state, and multi-actoral character*” (Benavides et al., 2020, p. 19).

# WHY DIGITAL TRANSFORMATION?

- Digitalization facilitates the **design of higher quality and more interesting** teaching materials, enables more efficient teaching and learning, facilitates the establishment and maintenance of cooperation, and contributes to the development of digital and AI skills and competencies.
- According to Bozkurt (2023) AI technologies may provide **various opportunities**:
  - ❖ “personalized learning,
  - ❖ the provision of inclusive curriculum,
  - ❖ enhancing collaboration and cooperation during educational processes,
  - ❖ automated assessment,
  - ❖ improved accessibility,
  - ❖ improving efficiency in terms of time and effort,
  - ❖ developing language skills, and the availability of such technologies 24/7 “ (p. 200).



# Perspectives



We can't control it and we can't ban it but we can help students learn to use it, in a supervised way, in a thoughtful way and a meaningful way.

— Sarah Eaton, Associate Professor  
University of Calgary, Expert in AI  
Education



# AI WILL BE HARMFUL



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AI will make it where people are totally **dependent** upon it. Students need to learn how to think, solve problems, and make decisions based upon facts, not what AI says. We are **dumbing down** our country when we take away the skills needed to make wise decisions.

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— District administrator for curriculum/instruction | Arkansas



# AI WILL CHANGE EDUCATION

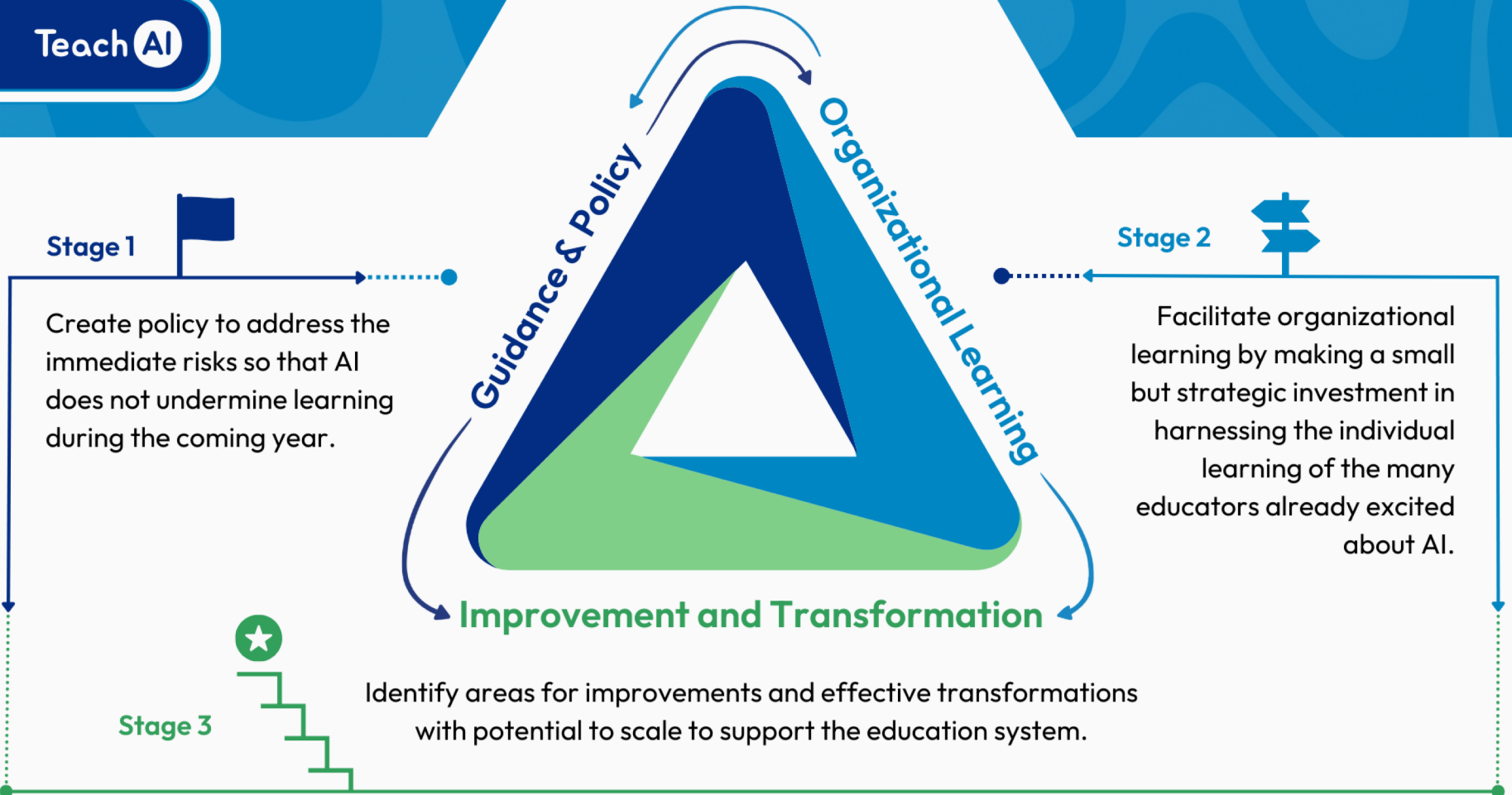


■ Schools will need to engage in **deep discussions of what students should know and be able to do** in the new era of AI. I think **AI WILL PUSH MAKING EDUCATION MORE RELEVANT** to the individual student, and the knowledge and skill s/he will need to transact with his/her life circumstances.

■ —District superintendent | California

# Steps for Implementing AI









# CHALLENGES OF DIGITAL TRANSFORMATION

# CHALLENGES OF DIGITAL TRANSFORMATION

- Educational institutions are **expected to require their employees to use highly professional digital tools** in performing their professional tasks.
- However, creating **digital education strategies** requires both a vision of digital learning/teaching and an understanding of digital media's role in this vision (Bernhard-Skala, 2019, p. 191).
- Considering debates on AIEd adoption, prior to its practical application there is a **NEED FOR UNDERSTANDING ITS ADVANTAGES AND DISADVANTAGES.**

# CHALLENGES OF DIGITAL TRANSFORMATIONS

A stylized logo for 'AI' in a bold, teal font, centered within a complex digital network of glowing blue and green lines and nodes. The background is a dark blue gradient with faint geometric patterns.

- Generative AI also poses various challenges, including:
- algorithmic bias,
- the need for reliable knowledge sources and quality control,
- inequality and inequity in access,
- a lack of creativity and critical thinking,
- manipulated AI models or manipulation by AI trainers,
- ignoring human agency in educational processes,
- the possibility of teacher replacement,
- privacy and ethics concerns,
- technical complexity, and
- dependence on technology (Bozkurt, 2023, p. 200).





# SKILLS AND COMPETENCIES

# SKILLS AND COMPETENCIES

- Considering fast development of AI tools for educators as well as technological growth “the most important recommendations are:
  - ❖ to train faculty members to use AI in education,
  - ❖ to highlight the benefits of adopting AI in education for educational leaders,
  - ❖ to provide AI tools and programs,
  - ❖ as well as technical support,
  - ❖ to provide incentives to teaching staff, and
  - ❖ to encourage scientific research in the field of AI in education”. (Alenezi, 2023, p. 87)

# TECHNICAL SUPPORT





# TECHNICAL SUPPORT

- Providing school Internet connections and creating digital copies of teaching materials **must not be the only steps in the digitalization of education systems** (Voronin et al., 2020).
- The digitalization of education should be viewed more broadly; it **goes beyond teaching digital content and online lectures** (Sandkuhl & Lehmann, 2017).

# TECHNICAL SUPPORT

- According to livari et al. (2020), today's students “*are not equally equipped for their technology-rich future: various kinds of digital divides still prevail in society and affect the young generation and their digital futures*” (p. 1).
- The digital **divide has a significant impact** on the possibilities and ways in which digital technologies can be used. **It causes a schism in students' development of digital and AI literacy and digital competencies.**



# TECHNICAL SUPPORT

- Some students feel **discriminated against** because their parents or guardians are unable to provide them with technologies and equipment used by their peers.
- **Societal divisions** are deepened if the *“truly valuable learning and advanced technologies can become part of an elite higher education system accessible to a limited portion of the public”* (Neborsky et al., 2020, p. 396). Schools should consider, then address, these issues appropriately.



# TECHNICAL SUPPORT

- With the development and application of AI, there is now an **additional division known as the AI divide, which produces inequities.**
- Neves (2023) defined AI divide on four levels:
  - a) no access to AI,
  - b) access to AI, but no understanding of AI,
  - c) access and understanding of ai, but inefficient use of AI and
  - d) access to AI, understanding AI, and insightful and efficiently use of AI.



# **AI MISUSE AND ADVERSE EFFECTS**

# MISUSE AND ADVERSE EFFECTS

- We live in a duality. All ancient traditions tell us that life is a mix of good and bad: Heaven vs. Hell (Christianity, Islam, Judaism) Yin vs. Yang (Chinese philosophy) Dharma vs. Adharma (Hinduism) Harmony vs. Disruption (Native American cultures) Ma'at vs. Isfet (Ancient Egyptian) Light vs. Darkness (Gnosticism, Star Wars!)
- AI does not change that.
- **AI WILL BRING BOTH GOOD AND BAD IN EQUAL MEASURE, HOWEVER DUE TO THE POWER OF AI, THE IMPACT WILL BE GREATER ON BOTH SIDES.**



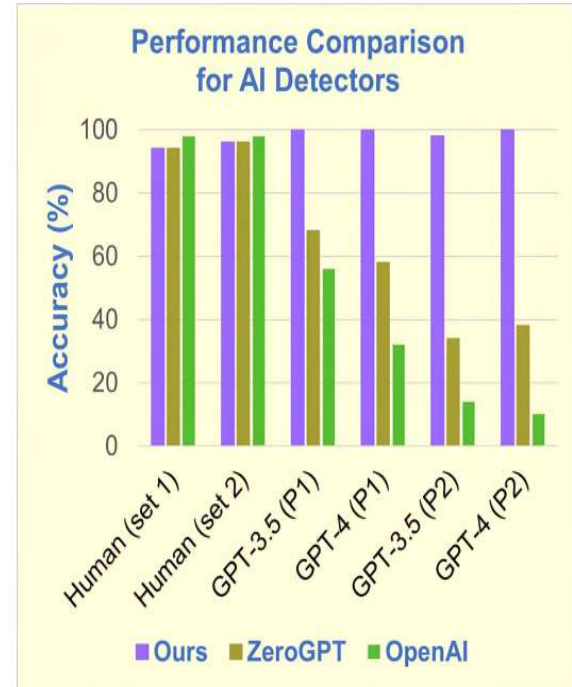


# MISUSE AND ADVERSE EFFECTS

- Human educators are more and more afraid of the use of AI in writing students' **essays and various other assignments**.
- As instructors “***we can neither disregard, resist, nor deny the enduring presence of generative AI-driven conversational agents***” (Bozkurt, 2023, p. 201).
- However, there are serious concerns that such tools “***leading students to progress and graduate on the basis of work that is not their own in the traditional sense***” (Bozkurt et al., 2023, p. 54).

# A NEW TOOL

- University of Kansas researchers have developed an AI text detector for scientific essays that can distinguish between human-written and computer-generated content almost 100% of the time.



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# LEGISLATION OF AI USE IN EDUCATION





# LEGISLATION OF AI USE IN EDUCATION

- **GDPR provisions are useful and applied for AI, but they are not sufficient.** Birkstedt et al. (2023) pointed out:
- *Although public demand for ethical AI continues to grow, if AI technologies are to benefit individuals, then organizations, society and stakeholders need to be able to trust the technologies and the organizations using them. Academic research should keep pace with the demand and lead discussions on sufficiently broad and practicable AIG (governance) approaches (p. 160).*

# LEGISLATION OF AI USE IN EDUCATION

- Council of Europe (2023) adopted resolutions which draws attention to the importance of ensuring that:
- *the use of Artificial Intelligence systems and data analytics in education settings protects human rights, supports democracy, and promotes the rule of law, and*
- *everyone understands to an appropriate level how AI works and what potential impact it has on our lives (p. 9).*



# LEGISLATION OF AI USE IN EDUCATION

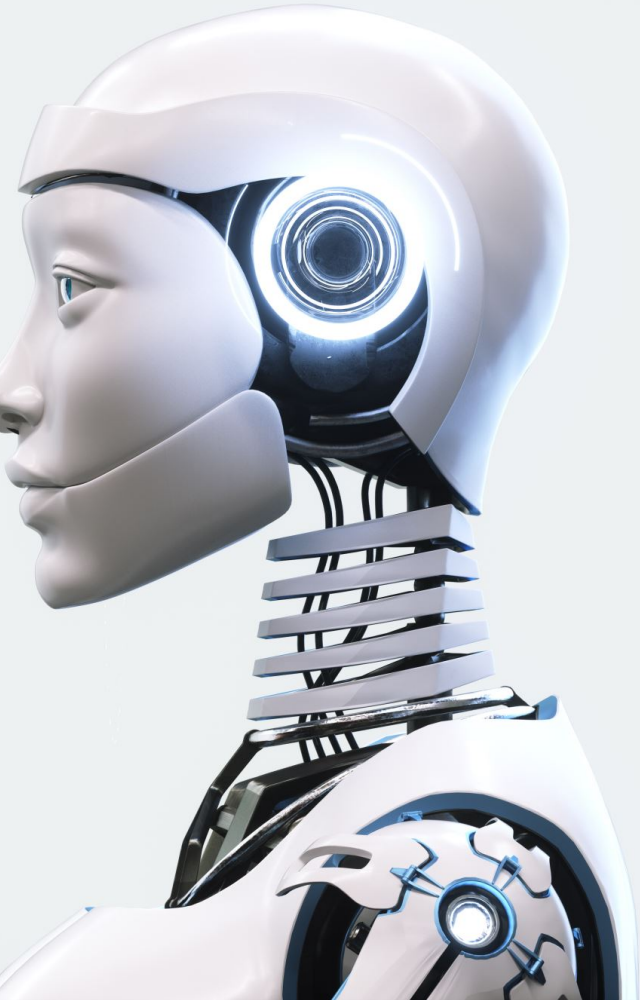
- UK, US, EU and China sign declaration of AI's 'catastrophic' danger
- **The UK, US, EU, Australia and China** have all agreed that **artificial intelligence poses a potentially catastrophic risk to humanity**, in the first international declaration to deal with the fast-emerging technology.
- Twenty-eight governments signed up to the so-called **Bletchley declaration** on the first day of the AI safety summit, hosted by the British government. The countries agreed to work together on **AI safety research**, even amid signs that the US and UK are competing to take the lead over developing new regulations.
- Rishi Sunak welcomed the declaration, calling it "quite incredible". He added: "***There will be nothing more transformative to the futures of our children and grandchildren than technological advances like AI***".



# LEGISLATION OF AI USE IN EDUCATION

- Frontier AI refers to the most cutting-edge systems, which some experts believe could **become more intelligent than people at a range of tasks.**
- Elon Musk, the owner Tesla and SpaceX, and of X, formerly Twitter, warned: *“For the first time, we have a situation where there’s something that is going to be far smarter than the smartest human ... it’s not clear to me we can actually control such a thing.”*





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## LEGISLATION OF AI USE IN EDUCATION

- Musk has on multiple occasions warned of the threats that AI poses to humanity, having once said **it could be more dangerous than nuclear weapons.**
- **On November 8, a robot killed a man in Korea.**
- Musk also said late Thursday (October 31, 2023) that AI will have the potential to become the **“most disruptive force in history.”**
- Considering the ever-increasing arguments and concerns about AI usage in education, **there is a need for legislation, rules, guides, monitoring, and ethical AI use.**



**CONCLUSION**



# CONCLUSION

The background of the slide features a central graphic of two hands shaking, rendered in a glowing, semi-transparent style. The hands are set against a dark, circular backdrop filled with intricate, glowing blue and orange patterns that resemble gears, circuitry, and data streams. The overall aesthetic is futuristic and technological.

- Universities should embrace AI technologies
- There is a need for effective strategies for the transformation of educational institutions.
- Staff pre-service and in-service training
- Instructors and students need technical support
- Potential harmful effects
- Regulations and legislations.



**Thank you!**

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