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Teaching and Learning  
Innovation Centre

# Being Future Ready: A Deep Dive into AI Literacy and Policy in Education

Prof. Cecilia K Y Chan

The University of Hong Kong

20 September 2023



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UNIVERSIDADE DE MACAU  
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教與學優化中心

Centro para a Melhoria do Ensino e da Aprendizagem  
Centre for Teaching and Learning Enhancement



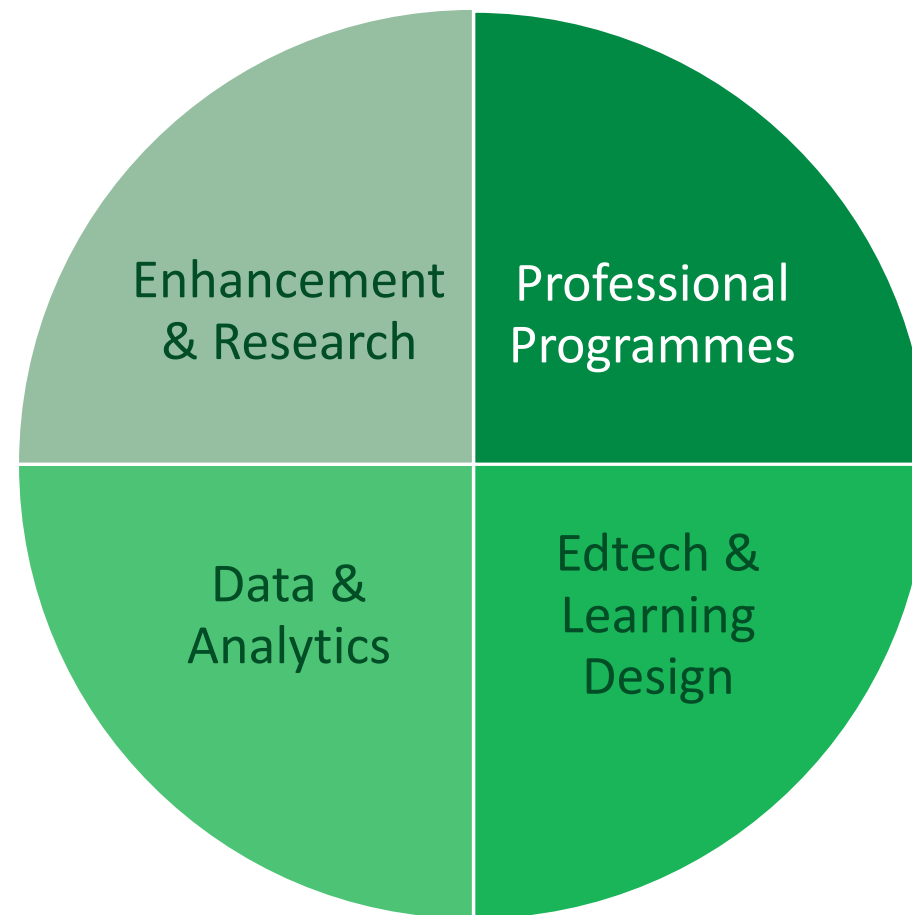
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# TaLiC

Teaching and Learning  
Innovation Centre






# Mentimeter QR Code



What are your thoughts on this?

A dark blue background with glowing white and light blue lines representing a network or circuit. In the center, the letters 'AI' are prominently displayed in a large, glowing blue font. Surrounding 'AI' are various icons: a QR code on the left, a lightbulb, a gear, a play button, and a box containing the binary code '011000'.

# **AI is here to stay Is it A Game Changer? Or A Pandora Box?**

**Well, that kind of depends on our move as  
human and also our move as educators**



# The Artificial Creativity Landscape



## Linguistic Creativity

### ALL-Purpose Text Generation



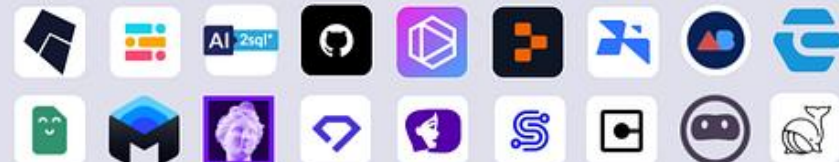
### Marketing & Sales Copy



### Text Optimization



### Coding & Web Development



## Musical Creativity

### Sound & Music Generation

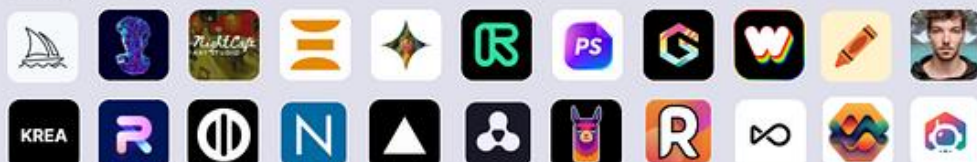


### Voice Synthesis



## Visual & Artistic Creativity

### Image Generation



### Video Generation



### Design

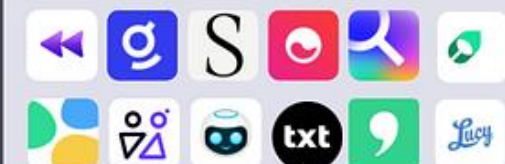


## Scientific Creativity



## Other

### Knowledge Management & Search



### Customer Support & Automation



### Characters



### Gaming



### Erotica



### Market Intelligence





## Cross-industry applications

<b>Manufacturing</b> 	<b>Warehouse automation</b> 	<b>Sales &amp; contact center</b> 	<b>Search</b> 	<b>Cybersecurity</b> 
<b>Customer feedback analysis</b> 	<b>Location data</b> 	<b>Worker safety &amp; incident prevention</b> 	<b>Business intelligence</b> 	<b>Engineering design</b> 
	<b>IT &amp; devops automation</b> 	<b>Other R&amp;D</b> 		

## Industry-specific applications

<b>Finance &amp; insurance</b> 	<b>Retail</b> 	<b>Healthcare</b> 	<b>Telecom</b> 	<b>Aerospace &amp; defense</b> 
<b>Government</b> 	<b>Auto</b> 	<b>Agriculture</b> 	<b>Construction</b> 	<b>Maritime</b> 
	<b>Gaming</b> 	<b>Waste management</b> 	<b>Media</b> 	

## AI development tools

<b>AI chips</b> 	<b>Data annotation</b> 	<b>Synthetic data</b> 	<b>Data de-identification</b> 	<b>Data quality &amp; observability</b> 
<b>Version control &amp; experiment tracking</b> 	<b>Model validation &amp; monitoring</b> 	<b>ML platforms</b> 	<b>Machine learning deployment</b> 	<b>Resource optimization</b> 
	<b>Computer vision</b> 	<b>Natural language processing</b> 		

Note: Companies are private as of 4/29/22

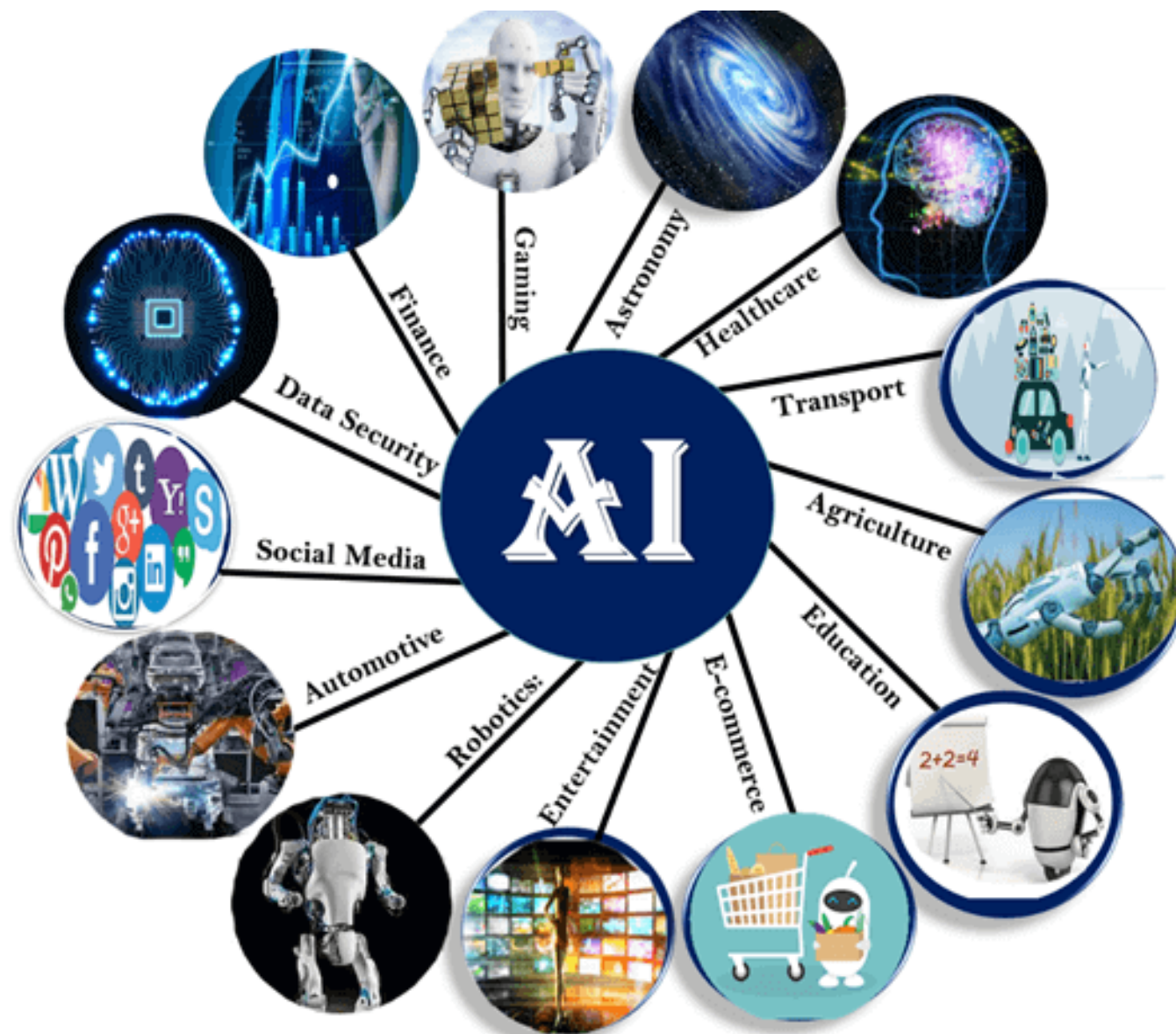




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# Different Industries



# 3 Types of Artificial Intelligence

## Artificial Narrow Intelligence (ANI)



Stage-1

### Machine Learning

- Specialises in one area and solves one problem



Siri



Alexa



Cortana

## Artificial General Intelligence (AGI)



Stage-2

### Machine Intelligence

- Refers to a computer that is as smart as a human across the board

## Artificial Super Intelligence (ASI)



Stage-3

### Machine Consciousness

- An intellect that is much smarter than the best human brains in practically every field





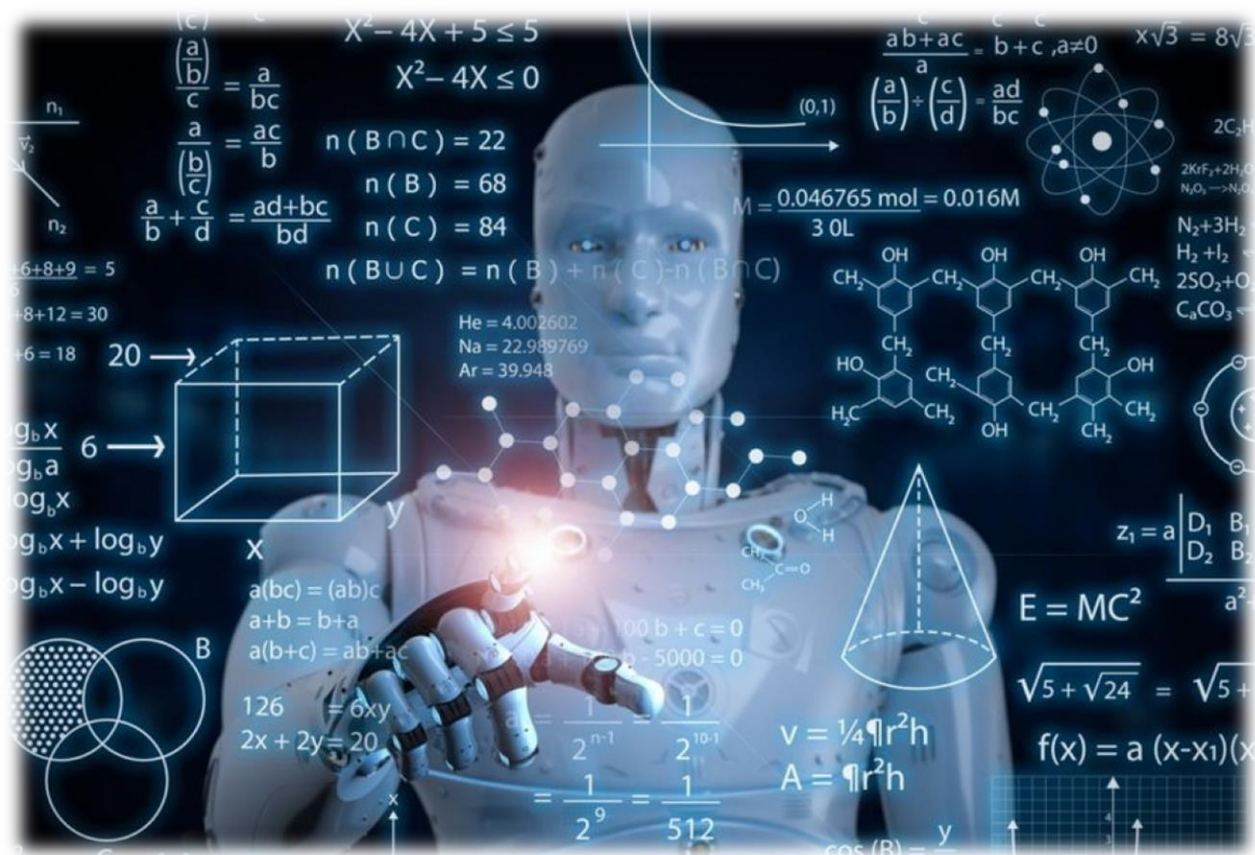
# Language and Grammar Translator

One area where GenAI could be useful is in language learning. The model could be used to help students practice their language skills by providing feedback on their writing, or by engaging in conversation with them in the target language. Additionally, GenAI could be used to generate reading materials and exercises tailored to the student's level and interests.



[This Photo](#) by Unknown Author is licensed under [CC BY-SA-NC](#)

# Automated Marking and Feedback Assessor



GenAI can be used to grade assignments and tests quickly and accurately, reducing the time required for manual grading and feedback.

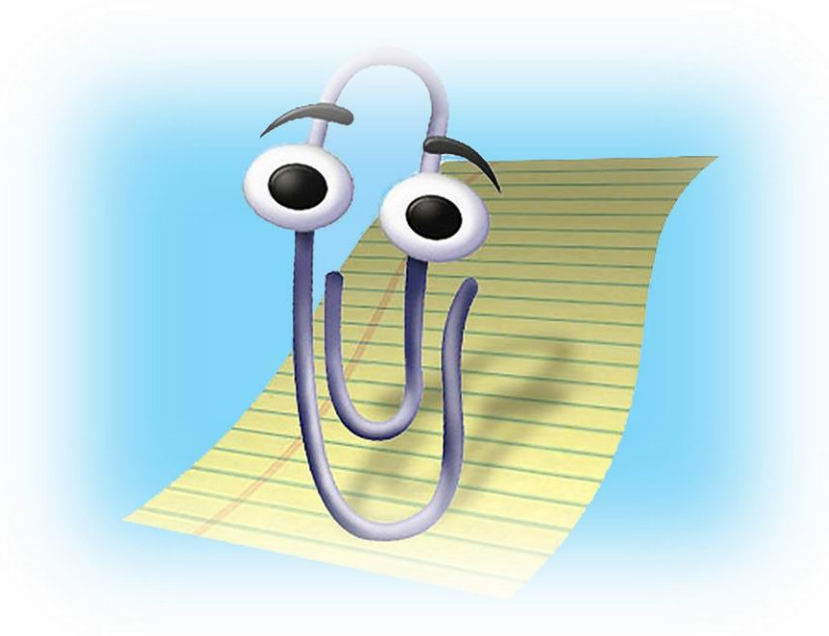




# Personal Adaptive Tutors

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GenAI can be used to create a personal adaptive tutor and counsellor to help answer questions about their studies, information about their programme, and career, retention and admission advices.





# Course, Content and Assessment Designer

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GenAI could be used to generate instructional materials, such as handouts, syllabi, and other resources for teachers and students.





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# Personal Assistant Research Assistant Counsellor/Therapist



**The rise of the machines? ChatGPT  
CAN pass US Medical Licensing Exam  
and the Bar, experts warn - after the AI  
chatbot received B grade on Wharton  
MBA paper**

**Bloomberg**

**ChatGPT Gets an MBA**



**CNN BUSINESS**

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# ChatGPT passes exams from law and business schools



By [Samantha Murphy Kelly](#), CNN Business

Updated 1:35 PM EST, Thu January 26, 2023



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# AI ChatGPT is helping CEOs think. Will it also take your job?

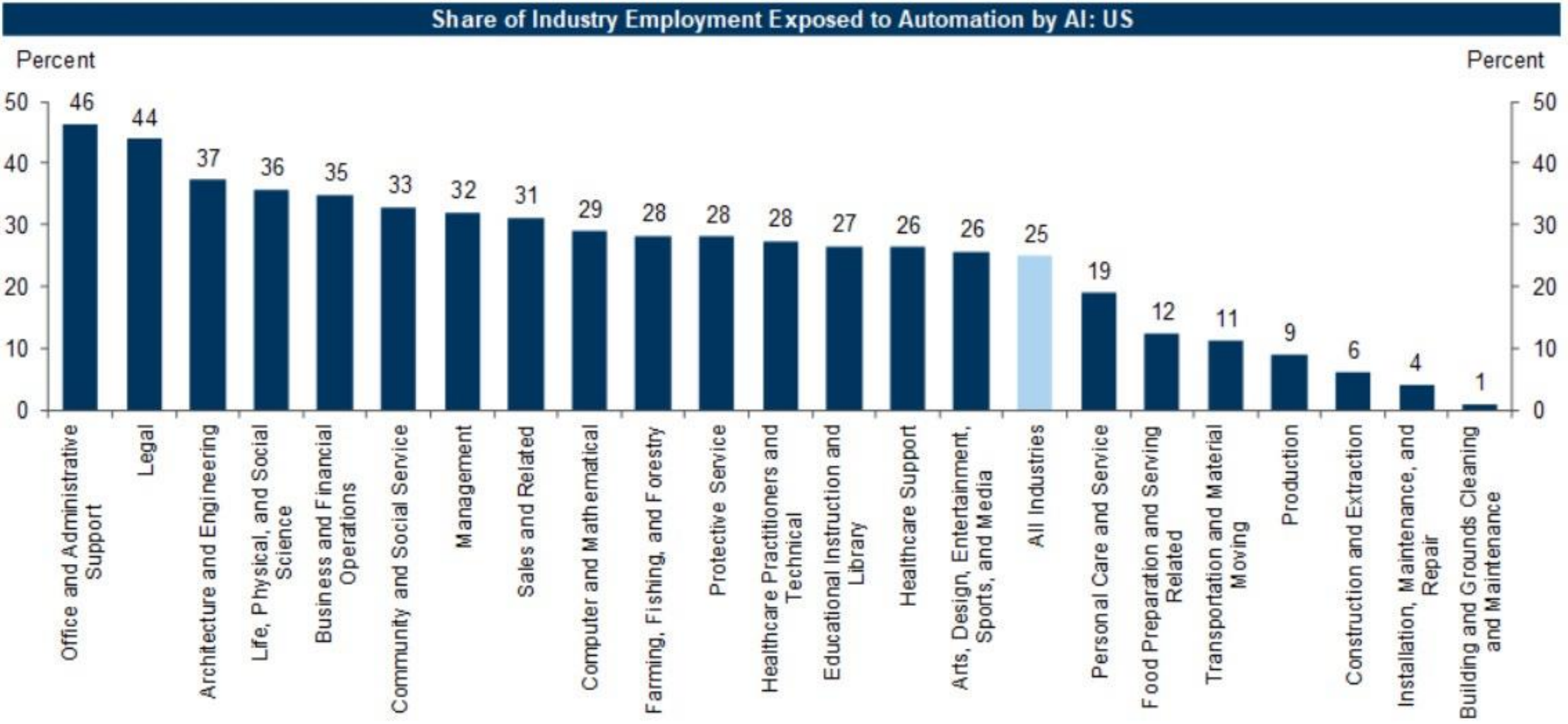
**MONEY  
WATCH**

BY MEGAN CERULLO

JANUARY 24, 2023 / 5:00 AM / MONEYWATCH



Exhibit 5: One-Fourth of Current Work Tasks Could Be Automated by AI in the US and Europe



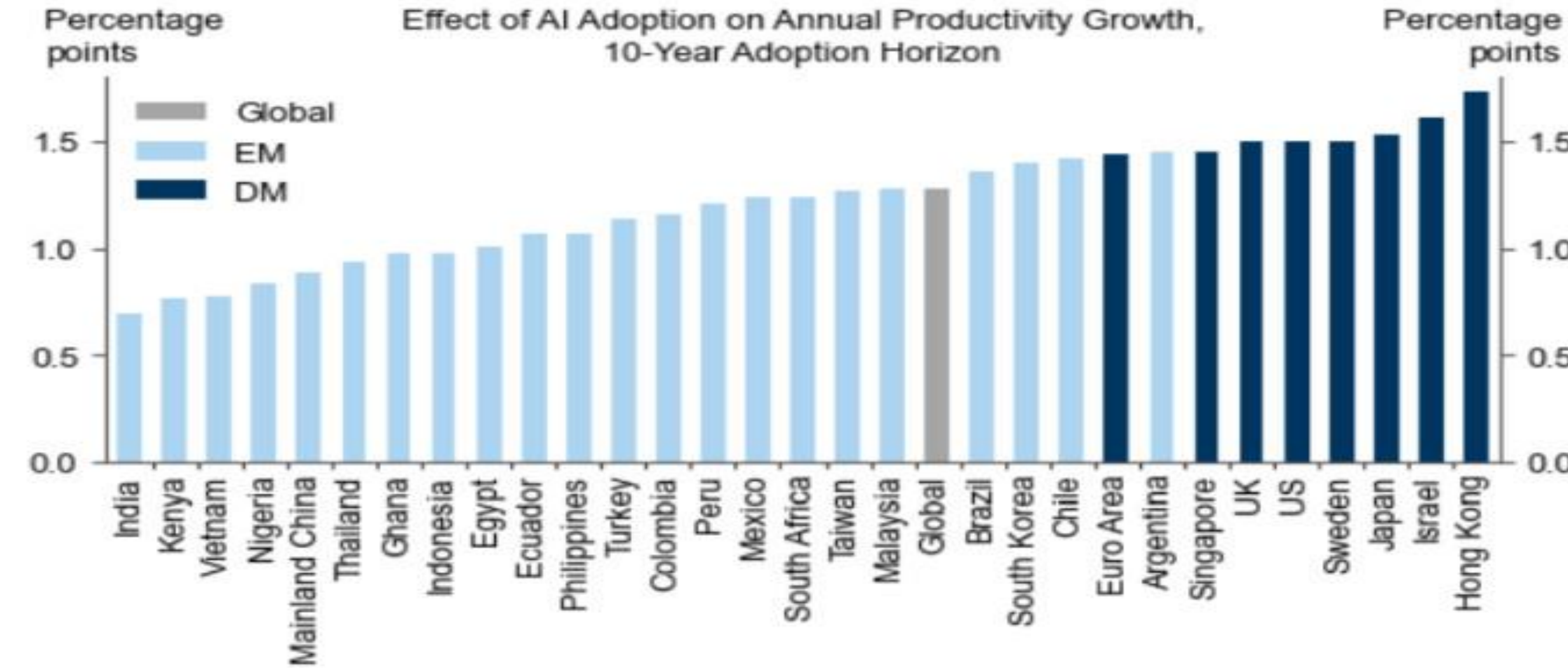
Source: Goldman Sachs Global Investment Research

March 27, 2023

<https://www.ft.com/content/50b15701-855a-4788-9a4b-5a0a9ee10561>



**Exhibit 14: Productivity Growth Boosts Could Be Sizable in Other Countries As Well; We Estimate Widespread AI Adoption Could Boost Global Annual Productivity Growth by 1.4pp Over a 10-Year Period**



Source: Goldman Sachs Global Investment Research

March 27, 2023

<https://www.ft.com/content/50b15701-855a-4788-9a4b-5a0a9ee10561>



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That makes it even more important for students to  
master AI



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# Demonstration

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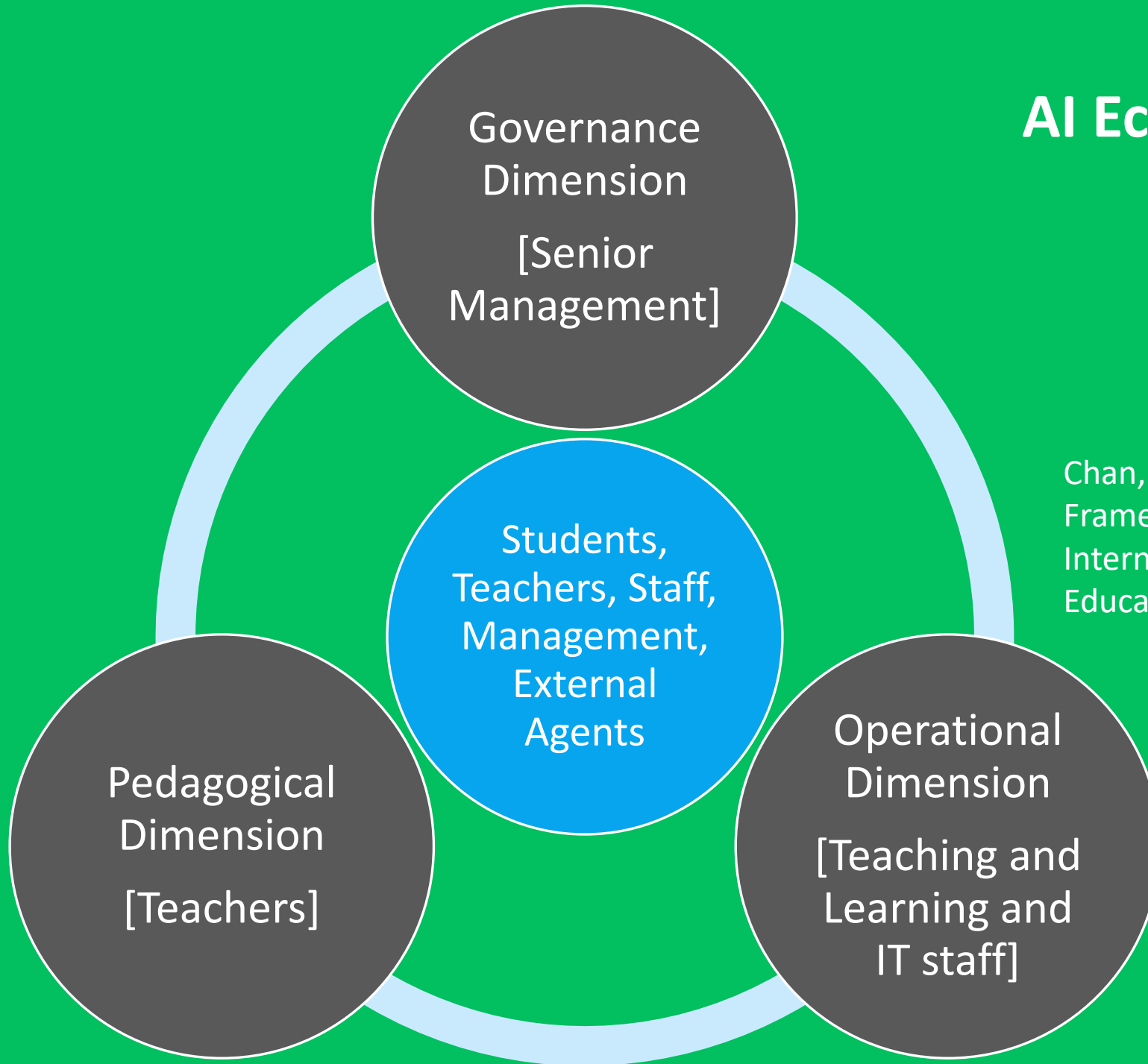
# Our Questions on GenAI

1. Are we using it?
2. How should we use it?
3. Are we monitoring our usage?
4. Do we understand how it actually works?
5. Could excessive use lead to reliance on it?
6. Might it replace us?
7. Could it diminish our opportunities to develop generic skills or even human values?
8. Should there be regulation?
9. Would there be constant monitoring of such regulation?

Chan, C.K.Y., & Hu, W. (2023). Students' Voices on Generative AI: Perceptions, Benefits, and Challenges in Higher Education. *International Journal of Educational Technology in Higher Education*. [in press]



# AI Ecological Education Policy Framework



Chan, C.K.Y. (2023). A Comprehensive AI Policy Education Framework for University Teaching and Learning. International Journal of Educational Technology in Higher Education. DOI : 10.1186/s41239-023-00408-3



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# Governance Dimension

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1. Understanding, identifying, and preventing academic misconduct and ethical dilemmas
2. Addressing governance of AI: data privacy, transparency, accountability, and security
3. Attributing AI technologies
4. Ensuring equity in access to AI technologies

Senior Management





# Operational Dimension

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1. Monitoring and evaluating AI implementation
2. Providing training and support for teachers, staff, and students in AI literacy

Teaching and Learning and IT staff



# Pedagogical Dimension

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1. Rethinking assessments and examinations
2. Developing student holistic competencies/generic skills
3. Preparing students for the AI-driven workplace
4. Encouraging a balanced approach to AI adoption

Teachers



# Provision

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**Redesigning Assessment with Generative AI: A Guide for Teachers** - Five Steps to AI-integrated Assessment Redesign, Attribution to AI, Scenarios for Assessment Redesign

**WhatsApp Hotline** - Hotline specifically for GenAI Teaching and Learning.





# Provision

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**HKU AI Clinic** - The clinic is staffed with colleagues from TALIC and trained students for one-to-one support, including downloading apps or trying out image, text, or video GenAI applications.

**AI in Education Website (AIED@HKU)** - A dedicated website will be launched around September/October this year to provide additional resources.

**AI-Literacy Self-paced Online Course** - We have developed an AI literacy course for all HKU students and staff.

## THE FIVE STEPS TO AI-INTEGRATED ASSESSMENT REDESIGN

1

Discuss among your  
Faculty/Department/Programme.  
Review University policy on AI in T&L

Decide in your course how GenAI  
can be used

2

3

Discuss with your students the strengths,  
weaknesses, opportunities and threats of  
GenAI

Revise your assessment approach to  
enhance student learning

4

5

Communicate clearly with your students  
how GenAI will be used in your course

For more information on assessment design  
AR@HKU Assessment Resources website  
<https://ar.cetl.hku.hk/index.php>  
AIED@HKU AI in Education website  
Check out <https://ai.talic.hku.hk>

Rethinking our pedagogy not just  
assessment but the learning process







# GenAI and Assessment

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- How do we know the student assessment is genuinely their work?
- How can we integrate AI into the curriculum and assessment?
- What constitutes academic misconduct when using GenAI?
- What do we mean by "AI-giarism"?



# GenAI Detection Software

**It is currently not advisable to rely on AI detection tools for ensuring the prevention of cheating or academic misconduct**



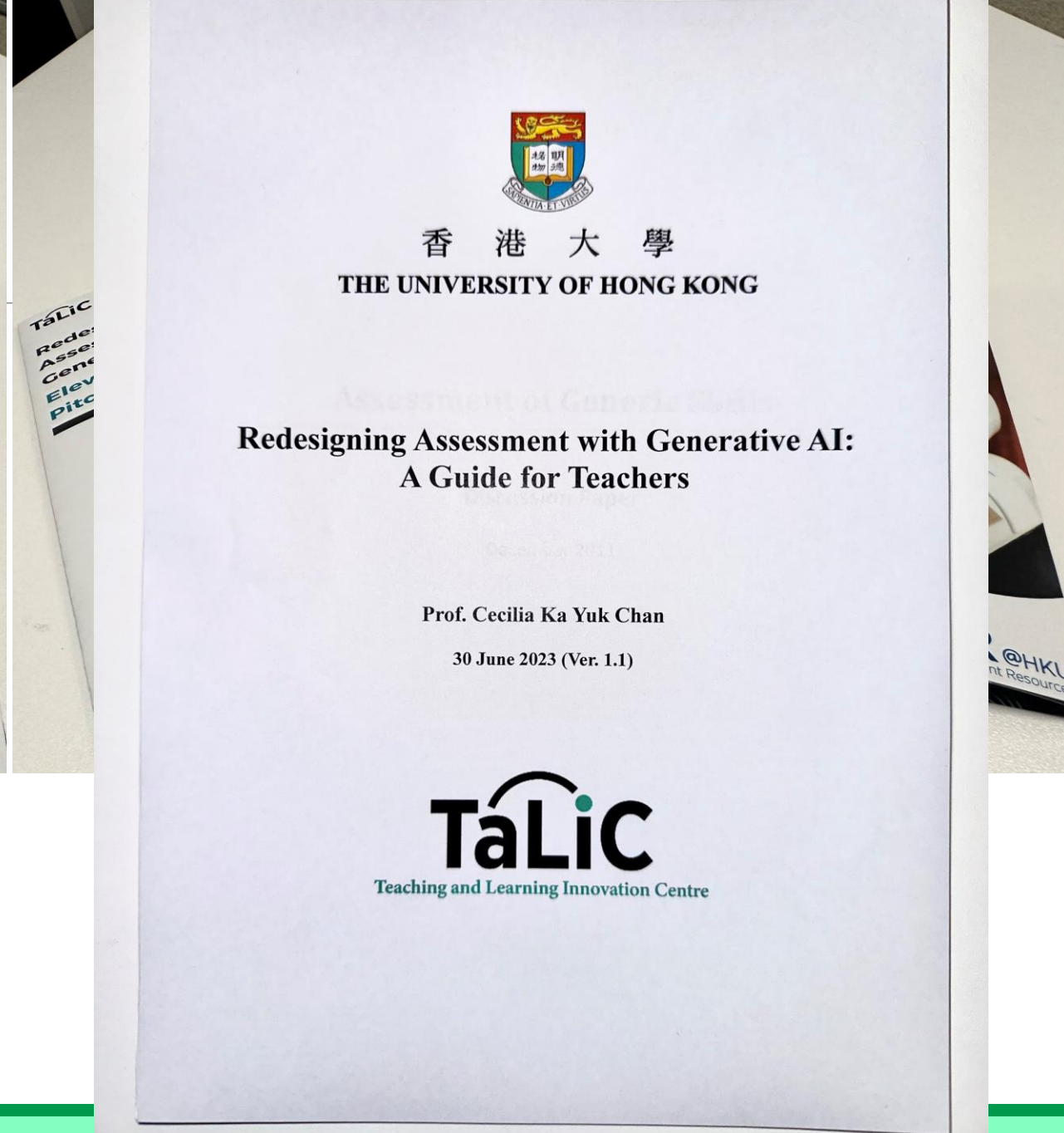
# Attribution to AI

“The author acknowledges the use of [AI tool’s name, version, and developer] in the process of [research, writing, data analysis, etc.] for this work. The AI tool served as an aid to [enhance readability, perform complex calculations, analyse extensive data, etc.]. It’s important to note that the AI-generated content was not used verbatim. Instead, it was thoroughly reviewed, edited, and curated by the author to ensure the accuracy, authenticity, and integrity of the information. The human oversight and judgment were paramount in interpreting and validating the AI’s contribution. Therefore, the final product is the result of a human-AI collaboration.”



AR@HKU website

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# What do you need to do in this AI era?

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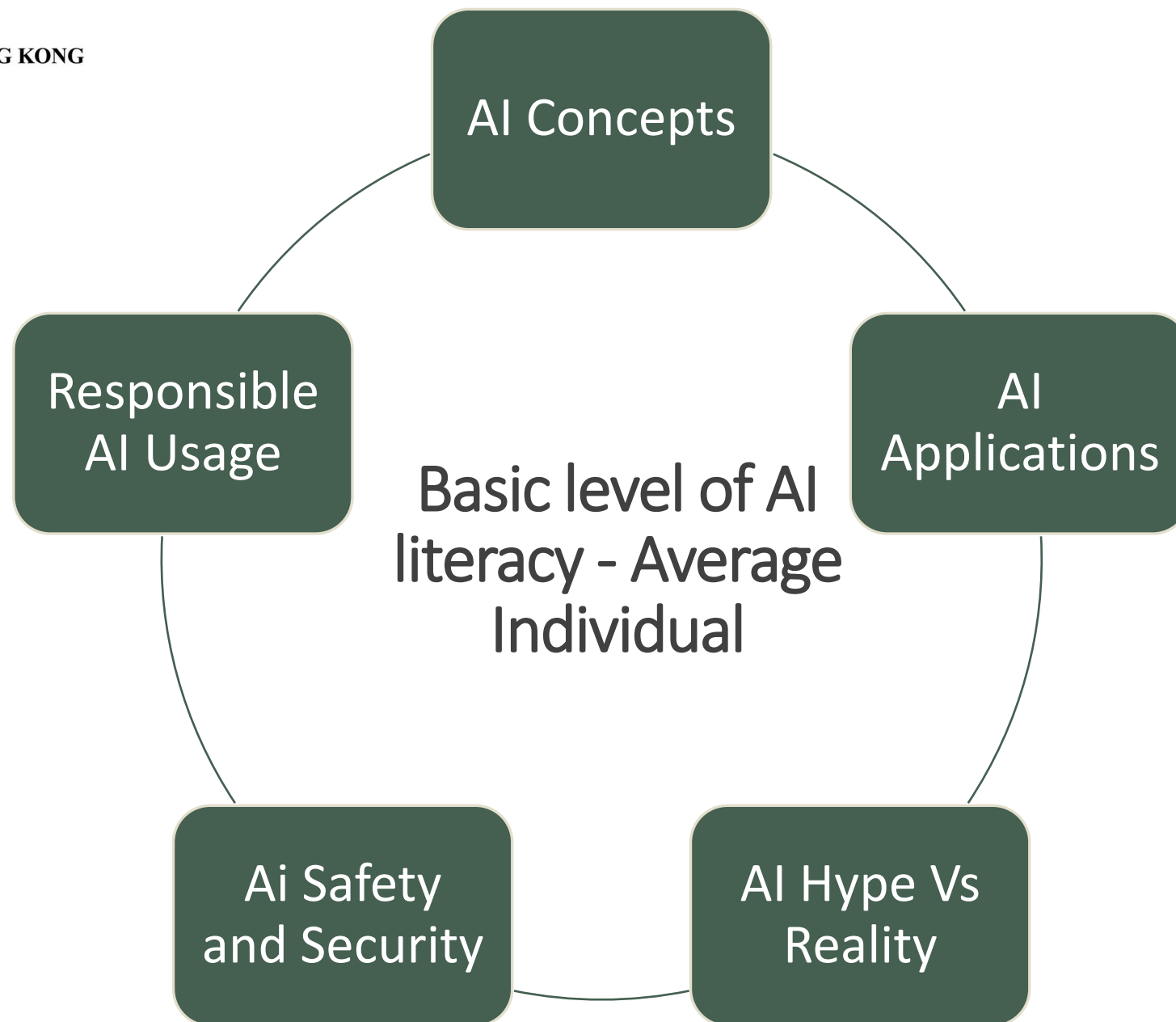
## AI Literacy



# Definition of AI literacy for Typical Individual

AI literacy for a typical individual is the ability to comprehend, interact with, and make informed decisions regarding AI technologies in daily life. It involves understanding the basic principles of AI, recognizing its applications, and being aware of ethical, social, and privacy implications while responsibly engaging with AI systems.

Chan, CKY, 2023.



Chan, CKY, 2023





# Mentimeter QR Code



What are your thoughts on this?



Are our students Future Ready?

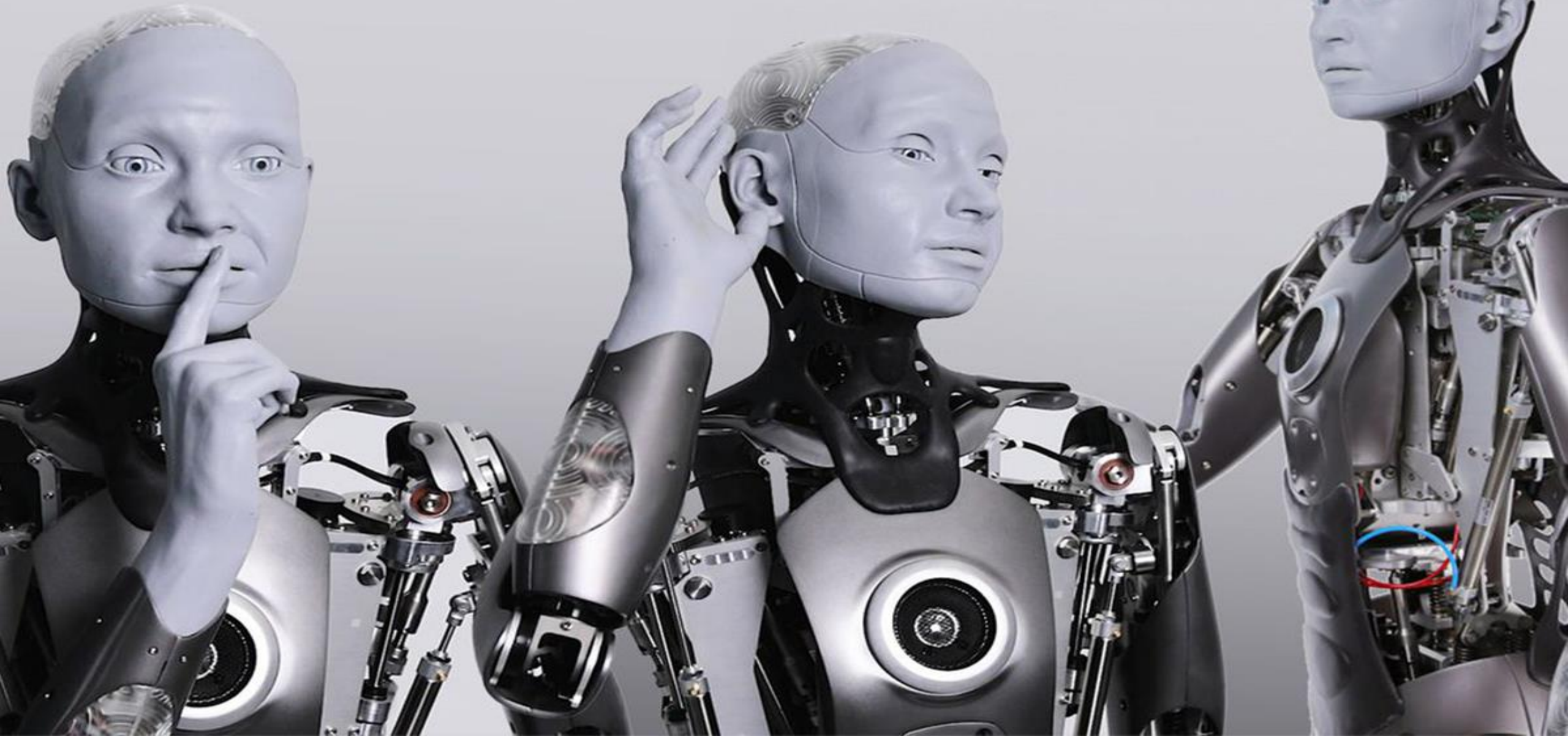




Are they ready for more unexpected events?



# Are they ready to be replaced?





Are they ready to accept new ideas in the new world and have future ready skills?



A stylized graphic of a microchip with the letters 'AI' in the center. The chip has a rectangular shape with notches on the left and right sides, and a series of small squares along the top and bottom edges representing pins. The background of the chip is a gradient of purple and blue.

AI

Can ChatGPT help our  
students to be Future  
Ready?



# Mentimeter QR Code



What are your thoughts on this?



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What can we do to ensure our students are  
future ready?





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Holistic Competencies & Virtues Education  
<https://www.have.hku.hk/>

LEADERSHIP



PROBLEM SOLVING



CRITICAL THINKING



CREATIVITY



PROFESSIONAL  
VALUES & ETHICS



SELF-AWARENESS



# HOLISTIC COMPETENCIES



LIFELONG LEARNING



GLOBAL  
COMPETENCY



INFORMATION  
LITERACY



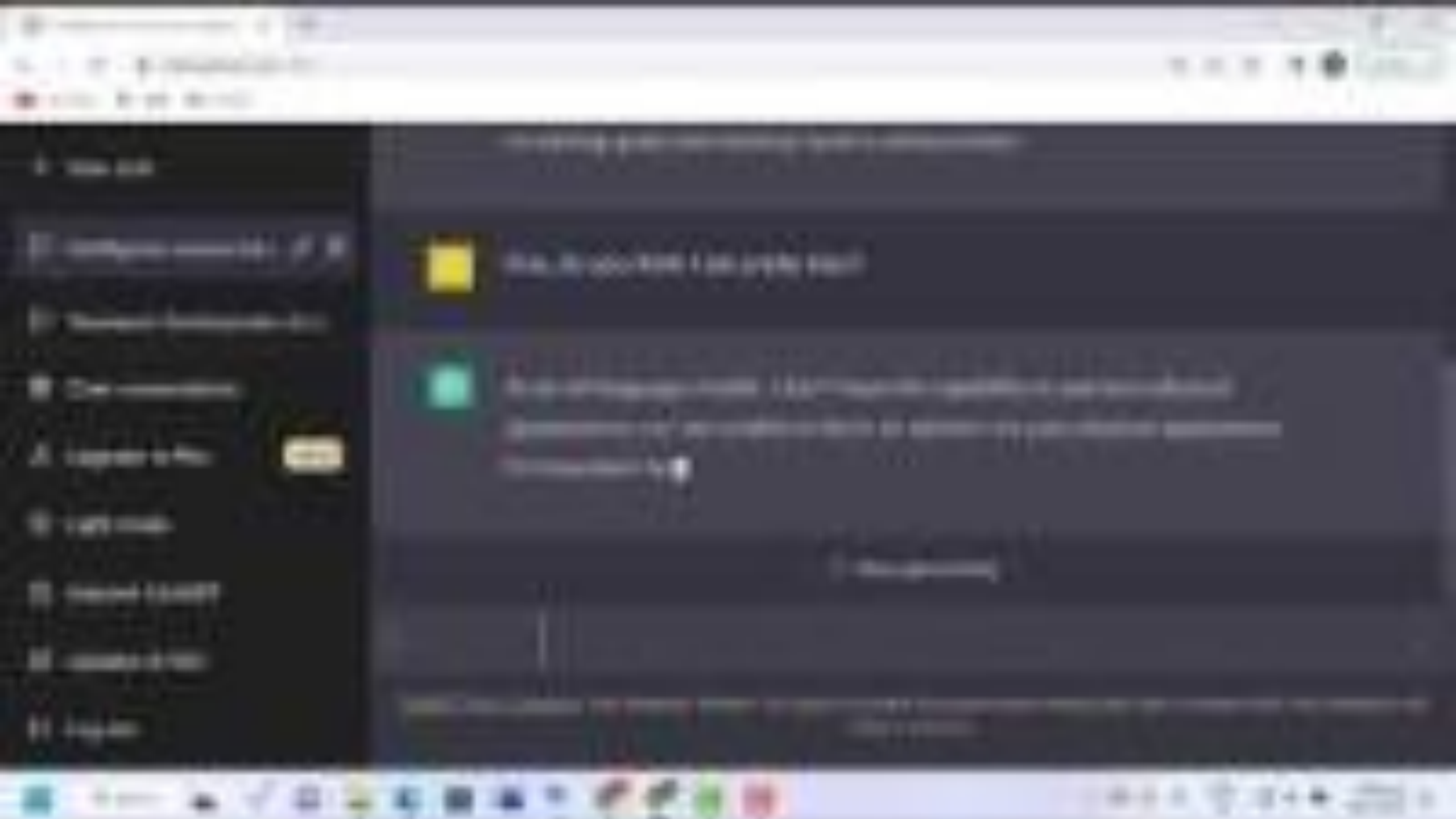
TEAMWORK



RESILIENCE



COMMUNICATION





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So how are we helping our students to showcase these competencies?

Do universities have a systematic plan for HC certification?



International Holistic Competency Foundation

# International Accreditation for Employability Competencies





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# International Partnership Competency



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UNIVERSITY OF SCIENCE  
AND TECHNOLOGY



香港浸會大學  
HONG KONG BAPTIST UNIVERSITY

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University & Colleges™  
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University  
of Glasgow



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**Maynooth  
University**  
National University  
of Ireland Maynooth



Lingnan University  
Hong Kong



King Mongkut's  
University of  
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Thonburi



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มหาวิทยาลัยสงขลานครินทร์  
Prince of Songkla University





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MANY INTERNATIONAL  
INDUSTRIAL PARTNERS



MANY COMMUNITY  
PARTNERS



MANY SCHOOLS AND NON-  
PROFIT ORGANISATIONS..



# Accredit your course for competency

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- Your curriculum design towards holistic competency is recognized internationally
- Your course is accredited to provide genuine evidence to showcase the quality of your course in holistic competency
- You can generate direct and indirect evidence of holistic competency development and assessment for quality assurance bodies
- You will become a Fellow of the International Holistic Competency Network and you will receive newsletters, promotions and conference invitations
- Your university, school or organisation will also be recognized as an advocate in this value-added holistic competency

# Competency Development Transcript

## Personal information

Student No: X1111314  
University: The University of Hong Kong  
Year of study: 3  
Questionnaire completed: Undergraduate Students' Perception of Holistic Competencies  
Completion date: 27 March 2018  
Faculty: Engineering

## Introduction

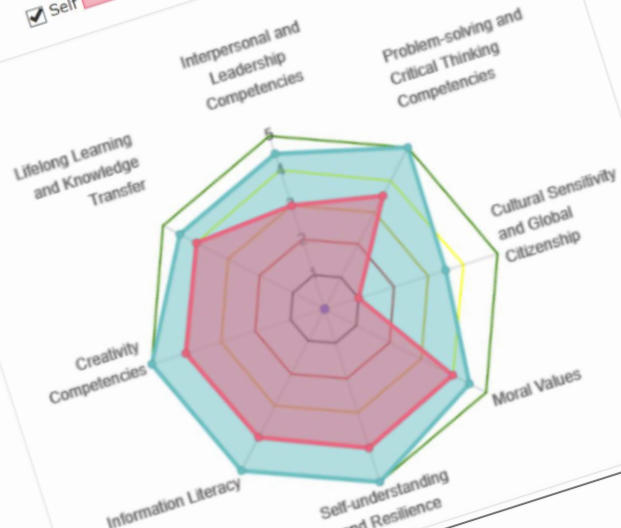
This report provides you with feedback for your personal development purpose based on your responses to the aforementioned questionnaire. This questionnaire measures undergraduate students' perception of holistic competencies, which are inclusive of different types of generic skills (such as communication, critical thinking, problem-solving, positive values and attitudes (such as consistency)). This report summarizes your ratings in terms of the questionnaire's competency scale and compares your self-assessment ratings with a sizeable group of undergraduate students at Hong Kong.

## Competency scales

The questionnaire comprises five competency scales (e.g., interpersonal and leadership skills, critical thinking and problem-solving skills). Each scale summarizes the ratings on a cluster of questionnaire items associated with the competency domain of the scale.

**Learning Outcomes (Knowledge and Competency)**

- ☒ Self
- ☒ Peers
- ☒ Activities

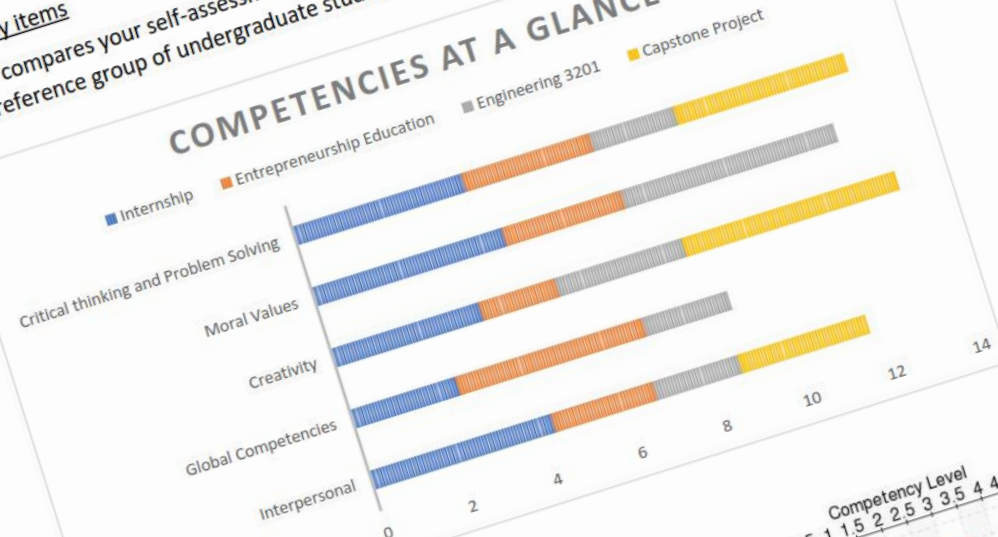


# Competency Development Transcript

## Competency items

This chart compares your self-assessment ratings on individual items with the averaged responses of a sizeable reference group of undergraduate students at Hong Kong.

## COMPETENCIES AT A GLANCE



■ Your rating  
■ Reference group's average rating

## Interpersonal and leadership skills

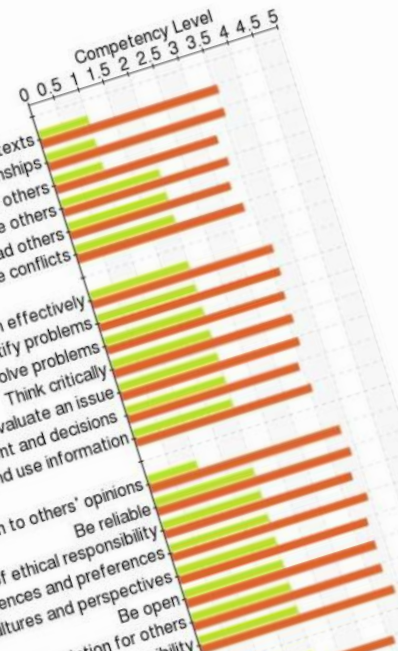
Communicate with others effectively in different contexts  
Build and maintain relationships  
Persuade others  
Motivate others  
Lead others  
Manage conflicts

## Critical thinking and problem-solving skills

Organise information effectively  
Identify problems  
Solve problems  
Think critically  
Analyse and evaluate an issue  
Make sound judgement and decisions  
Have the ability to effectively find, evaluate and use information

## Respect and responsibilities

Work with others and listen to others' opinions  
Be reliable  
Be aware of ethical responsibilities  
Respect individual differences and preferences  
Be open to other cultures and perspectives  
Be open to others' opinions





History has shown us that when technologies are used appropriately and judiciously, they work alongside us to improve our way of living. Whether AI technology is a game-changer for us or a Pandora's box does not matter. What matters is how we can leverage this opportunity while remaining ethical. We need to use our imagination and be Future Ready. The question is, are you ready to move forward with it?



# AI in Education

1. AI policy
2. AI literacy
3. Redefine AI-giarism



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# Thank You

If you wish to contact me for further information

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- Linkedin: [dr-cecilia-chan-74030260](https://www.linkedin.com/in/dr-cecilia-chan-74030260)

