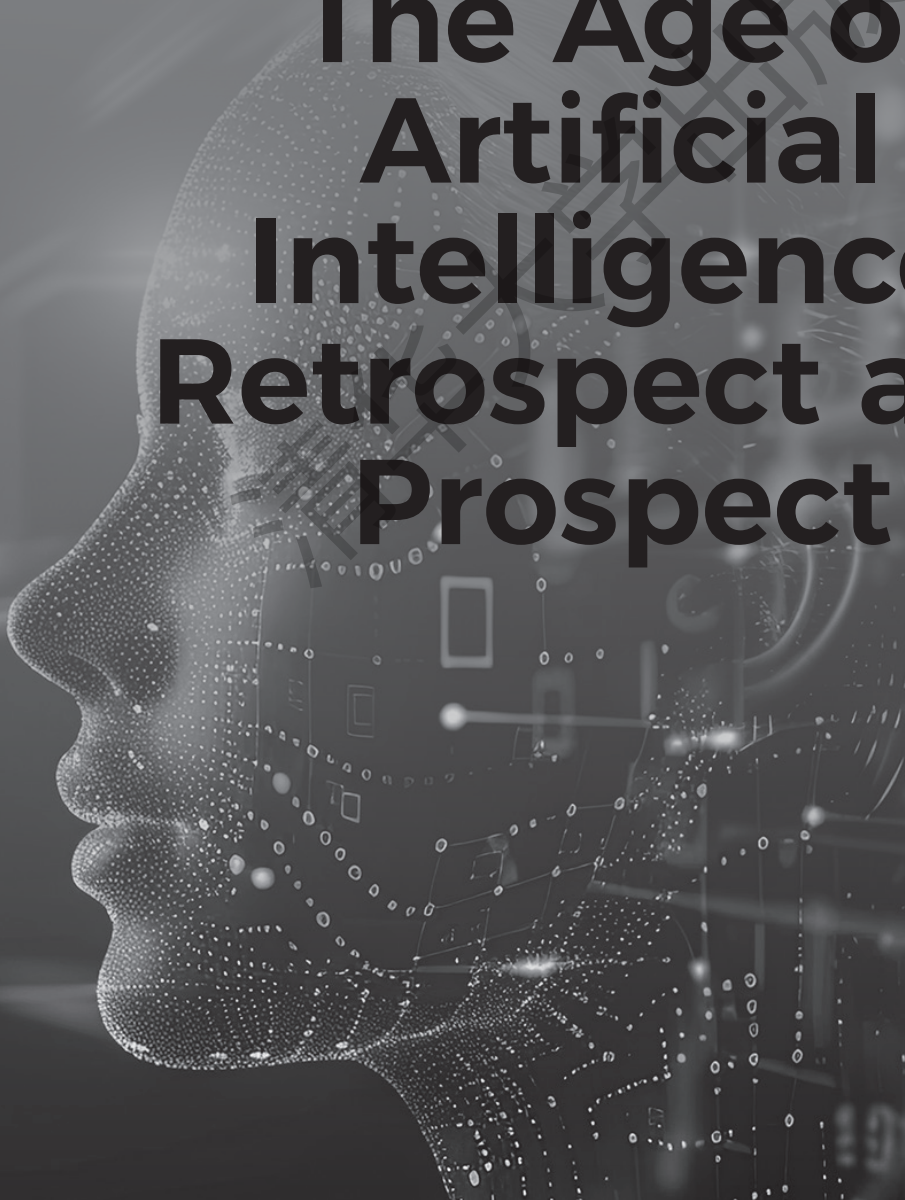


UNIT 1

The Age of Artificial Intelligence: Retrospect and Prospect





Learning Objectives

Upon the completion of this unit, you will be able to:

- trace the evolution of AI technologies and envision their future applications;
- develop a key vocabulary related to generative AI and simulation techniques;
- master the overall structure of empirical research articles;
- comprehend the process of hypothesis formulation and testing;
- recognize the main linguistic features of academic English;
- apply AI tools to structure and improve a research poster.



Warm-Up

As artificial intelligence (AI) continues to advance, some systems now allow people to have conversations with a digital version of their future self. These interactions can influence how people think about their personal growth, decision-making, and long-term goals.

In this activity, you will work in groups to discuss how AI might shape people's views of the future. Each group will explore and discuss a realistic scenario following the steps:

Step 1 Read your assigned scenario carefully and discuss the guiding questions with your group. Share your thoughts and listen to others.

Step 2 Choose one member in your group to take notes and summarize your group's key points.

Step 3 Be ready to share your group's summary with the class. Each group will have one to two minutes to present their discussion highlights.

Scenario A: AI as a Personal Life Advisor

Description:

Imagine an AI system that analyzes your personality, habits, and goals to provide personalized guidance on major life decisions, such as career choices, financial planning, or relationship management. For example:

- If you are uncertain about choosing a major, the AI might say: *"Based on your interests and current market trends, pursuing a career in data science could be a great fit for you."*
- If you are feeling unmotivated, it might encourage you by saying: *"People with similar strengths have succeeded through perseverance. Keep going!"*

Questions:

1. How would you feel about receiving guidance from an AI system instead of a human mentor?
2. What are some potential advantages and disadvantages of relying on AI for personal decision-making?
3. In what ways might AI-generated advice be different from advice given by family or friends?

Scenario B: AI and Career Planning

Description:

A new AI platform claims to predict future career trends and suggests optimal paths for individuals based on their skills, interests, and market demands. It even generates simulated versions of your future self in different professions. For example:

- If you are passionate about automotive technology, the AI might show you a future version of yourself working as an automotive engineer, developing smart and sustainable vehicles.
- If you are curious about entrepreneurship, it could suggest: *"In 10 years, you might be running your own business. Here's how you could get there."*



Questions:

1. Would you trust the AI to help you choose a career? Why or why not?
2. How might AI-based career predictions influence the way people prepare for their futures?
3. Could such technology reduce or increase people's anxiety about the future?

Scenario C: AI and Emotional Well-Being

Description:

Some AI systems are designed to support mental health by helping individuals visualize their future and encouraging positive life choices. These systems aim to reduce stress, increase motivation, and improve self-reflection. For example:

- If you are struggling with confidence, the AI might say: *"Your future self has overcome these doubts. Stay persistent."*
- If you are worried about an upcoming exam, it could remind you: *"Every challenge you face now is contributing to your future success."*

Questions:

1. How might talking to an AI-generated version of your future self affect your emotions and mindset?
2. Could AI help people feel more in control of their future, or might it create unrealistic expectations?
3. In what ways could AI systems support mental well-being, and what risks should be considered?

Now, let us explore a research project related to this topic. Text A examines how interacting with an AI-generated future self can influence emotions, decision-making, and personal development. As you read, reflect on how these findings relate to your own perspectives.



Text A

A Conversation with an AI-Generated Future Self Reduces Anxiety, Negative Emotions, and Increases Future Self-Continuity

1 Have you ever wondered what your future self might be like? Thanks to advancements in generative AI, this is now possible. Researchers from MIT and other institutions have developed a system called “Future You”, which enables users to engage in online, text-based conversations with an AI-generated simulation of their future self. The system is designed to help individuals improve their sense of “future self-continuity”, a psychological concept that refers to how connected a person feels to their future self.

A Virtual Time Machine

2 “Future You” uses a large language model to create a **virtual** version of a person at the age of 60 (Figure 1.1). The system generates a **personalized** simulation based on responses to a **pre-intervention** survey that asks users about their goals, values, and current life circumstances. This data helps the AI **simulate** a more **relatable** future version of the user. Additionally, the system creates a “future memory” for each user, providing a backstory for their future self, and **age-progresses** a submitted headshot to show what the user might look like at 60 to increase the believability of the future self character.

3 Research suggests that people with a strong sense of future self-continuity tend to make better long-term decisions, such as saving for retirement or focusing on academic success. “Future You” aims to **foster**

this connection by helping users reflect on their potential futures, encouraging more thoughtful choices in the present.

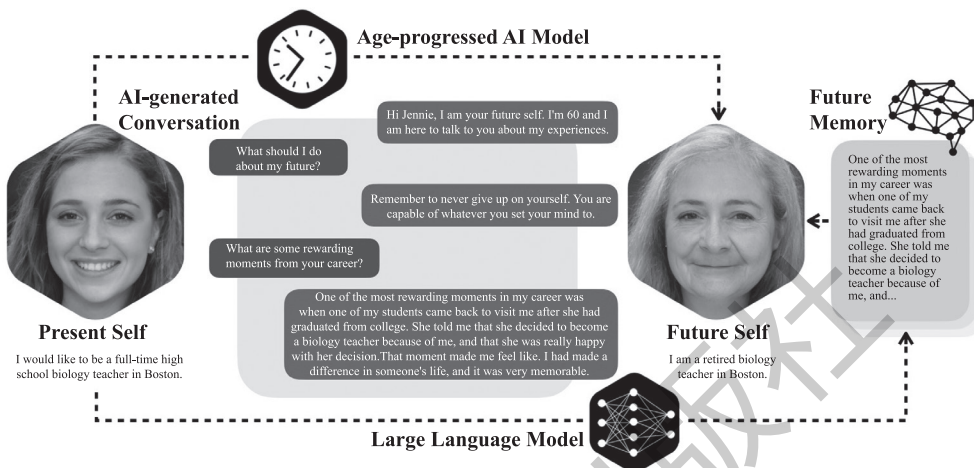


Figure 1.1 “Future You” as an interactive chat platform that allows users to converse with a relatable yet virtual version of their future self in real-time

Realistic Interaction

4 The core of the system lies in its ability to simulate a future version of the user. The AI chatbot engages users in conversations about their goals, challenges, and **aspirations**, offering advice on how these might unfold over time. For example, the chatbot could discuss milestones in a user’s career or how they overcame obstacles. The system uses data from various personal experiences to generate relevant and realistic responses.

5 Users engage with the systems in two key ways: **introspection**, where they reflect on their life and goals, and **retrospection**, where they assess whether the simulated future **aligns** with their vision. This interaction allows them to explore their goals and future path in an **immersive, reflective** way.

6 To enhance realism, the system generates an age-progressed photo of the user (Figure 1.2). The chatbot often uses phrases like “When I was your age...” to make the conversation feel more personal, creating a deeper connection with the future self.

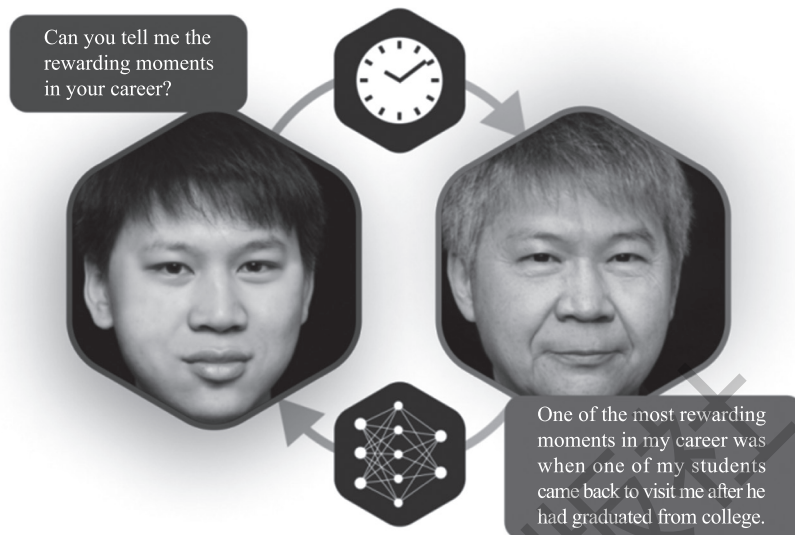


Figure 1.2 Chatting with a 60-year-old version of oneself in “Future You”

Study Design and Key Findings

7 To evaluate the effectiveness of “Future You”, researchers conducted a study with 344 participants. Some users engaged with the system for 10 to 30 minutes, while others interacted with a generic chatbot or completed only surveys. The goal was to assess the impact of interacting with a simulated future self versus a non-personalized AI.

8 The results revealed that users who interacted with “Future You” felt a stronger emotional connection to their ideal future self. They also reported lower levels of anxiety about the future. Statistical analysis showed that these users felt their values and beliefs were consistent between their present self and the future self they interacted with. This sense of continuity between present and future was linked to more confident decision-making.

9 Pat Pataranutaporn, a co-lead author of the study, commented, “We can use this simulation to help people think more about the consequences of the choices they are making today.” The research suggests that by conversing with their future self, users were able to consider the long-term consequences of their current actions in a concrete, vivid way.



Enhancing Self-Development

10 The “Future You” system encourages users to reflect on their goals and how their future self might view their current choices. This reflective process can foster personal growth and help individuals understand the kind of person they want to become. By emphasizing that the future is not fixed but shaped by one’s actions, the system gives users a sense of **agency** in shaping their **destiny**.

A Cautionary Approach

11 Despite its potential benefits, the system’s realism could also pose risks if users were to view a negative future as inevitable. To **mitigate** this, the researchers have **incorporated** safeguards to ensure that users understand they have the power to change their future. Users can explore different outcomes based on **alternate** responses to the initial survey, **reinforcing** the idea that they can alter the course of their lives. Pataranutaporn emphasized, “This is not a **prophecy**, but rather a possibility.”

Moving Forward

12 Building off the results of this initial user study, the researchers continue to **refine** “Future You”, exploring additional applications, such as helping users consider career paths or visualize how their everyday choices could impact climate change. They are also gathering more data to better understand how people engage with the system and how it can be used effectively for personal growth.

13 As AI technology advances, the potential applications of simulations like “Future You” are vast. Researchers hope that such tools can inspire users to think more critically about their lives, helping them make better decisions today for a better future.

[Source: Adapted from Adam Zewe’s article posted on MIT News website (1 October, 2024).]

New Words and Expressions

virtual	/ˈvɜːtʃuəl/	<i>adj.</i> existing in cyberspace 虚拟的, 模拟的
personalized	/ˈpɜːsənəlaɪzd/	<i>adj.</i> tailored to the individual needs or preferences 个性化的
intervention	/ˌɪntəˈvenʃn/	<i>n.</i> actions taken to change a situation, provide help, or influence an outcome 干预
simulate	/ˈsɪmjuleɪt/	<i>v.</i> to imitate 模拟
relatable	/rɪˈleɪtəbl/	<i>adj.</i> able to be connected or associated 可关联的
age-progress	/ˈeɪdʒˈprɒɡres/	<i>v.</i> to advance in age or show aging effects 变老
foster	/ˈfɒstə(r)/	<i>v.</i> to encourage the development 促进
aspiration	/æspəˈreɪʃn/	<i>n.</i> a strong desire to achieve sth. 抱负; 志向
introspection	/ˌɪntrəˈspekʃn/	<i>n.</i> the examination or contemplation of one's own thoughts and feelings 内省
retrospection	/ˌretrəˈspekʃn/	<i>n.</i> looking back on past events or experiences 回顾; 反思
align	/əˈlaɪn/	<i>v.</i> to position things in the correct relative position 使一致
immersive	/ˈɪmɜːsɪv/	<i>adj.</i> engaging or involving sb. deeply 沉浸式的
reflective	/rɪˈflektɪv/	<i>adj.</i> engaging in or involving deep thought about sth. 反思的
agency	/ˈeɪdʒənsi/	<i>n.</i> the capacity to act independently and make free choices 能动性
destiny	/ˈdestəni/	<i>n.</i> the events that will necessarily happen in the future 命运
mitigate	/ˈmɪtɪɡeɪt/	<i>v.</i> to make sth. less severe, serious, or painful 减轻; 缓解
incorporate	/ˌɪnˈkɔːpəreɪt/	<i>v.</i> to include sth. as a part of a larger whole 纳入
alternate	/ˌɔːlˈtɜːnət/	<i>adj.</i> occurring by turns; existing in two forms 交替的; 代替的



reinforce	/riːnˈfɔːs/	v.	to make sth. strong 强化; 巩固
prophecy	/'prɒfəsi/	n.	a prediction about future events 预言
refine	/rɪˈfaɪn/	v.	to improve sth. by making small changes 完善

Key Terms

generative AI	生成式人工智能
self-continuity	自我连续性
large language model	大语言模型
generic chatbot	通用聊天机器人

Note

Future You	“Future You” is an AI-powered chat platform developed by MIT, allowing users to interact with a virtual future self (e.g., at age 60) through conversation. The system generates a personalized future avatar based on the user’s current life goals and personal qualities, aiming to enhance future self-continuity, reduce anxiety, and foster a positive outlook on the future. It serves not only as a predictive tool but also as a means for reflection and future planning.
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Academic Reading and Research Skills

Task 1 Choose the best answer to each of the following questions about Text A.

- What is the primary purpose of the “Future You” system developed by MIT researchers?
 - To predict the exact future of an individual.
 - To help users improve their sense of future self-continuity.
 - To provide entertainment through virtual conversations.
 - To assist users in making short-term decisions.