

3. Going Digital for a Digital World

Can AI Think, Communicate, and See the World Like Us?

학 번	
이 름	

◆ as 형용사 / 부사 as: ~만큼 …하다

✓ 형용사 예문

My dog is **as lazy as** a cat on Sunday.

✓ 부사 예문

He runs **as fast as** a cheetah in a video game.

✓ 적절한 표현으로 빈칸 채우기

He stayed as cool as a _____ during the test.

My brother is as busy as a _____ before exams.

The baby slept as quiet as a _____.

After the long run, I was as tired as a _____.

[Paragraph #1]

❶The pursuit of artificial intelligence (AI) **[was/ has]** been ongoing since the 1950s.
추구 계속 진행중인

❷**(Despite/ Though)** some obstacles and challenges along the way, significant progress has been made in AI technology. 그 과정에서
상당한 발전

❸Scientists have been able to develop machines **[that/ what]** can think, communicate, and see the world, although not with the same level of precision as humans. =although they cannot do so
정밀함 ~와 같은

❹These machines have evolved and improved over time.

❺In exploring the history of AI, there are some key moments which **[deserve/ deserves]** our attention. deserve attention 주목 할 만하다

[Paragraph #2]

In 1950, Alan Turing Asked the Question, "Can Machines Think?"

1950: *Alan Turing* introduced the Turing test.

❻Often **[considered/ considering]** the father of modern computer science, *Alan Turing* was famous for developing the idea of computer memory and making the first design of an electronic stored program.

*stored program
:전자식 기억 장치에 데이터나 프로그램 명령어를 저장하는 방식

논문 ~라는 제목을 가진

❼In 1950, in <u>his research paper</u> titled "Computing Machinery and Intelligence," he posed a thought-provoking question: Can machines think?
제기하다 유발하는, 자극하는, 촉발하는

❽This research paper was the first to provide a framework for thinking about machine intelligence. the first toV:
~인지 (아닌지)

❾Turing wanted to see if a machine could _____ **(as/ as/ humans/ be/ intelligent)** and asked himself, "If a machine could imitate human behavior, why wouldn't it be able to think like a human?"

[#1] 인공지능에 대한 추구

❶인공지능(AI)에 대한 _____는 1950년대부터 계속되어 왔다.

❷그 과정에서 일부 _____이 있었지만, AI 기술에 있어서 _____이 이루어져 왔다.

❸과학자들은 _____은 아니지만, _____는 기계들을 개발해 올 수 있었다.

❹이러한 기계들은 시간이 지남에 따라 _____.

❺AI의 역사를 탐구하는 데 있어서, _____몇 가지 중요한 순간들이 있다.

[#2] Alan Turing의 Turing Test 도입

❻흔히 _____로 여겨지는 Alan Turing은 _____하고 최초로 전자 저장 프로그램을 설계한 것으로 유명했다.

❼1950년에, 그는 '계산 기계와 지능'이라는 제목의 연구 논문에서, '기계가 생각할 수 있는가?'라는 _____다.

❽이 연구 논문은 기계 지능에 대해 _____을 최초로 제공했다.

❾Turing은 기계가 인간만큼 지능적일 수 있는지 알아보기를 원했으며, '만약 기계가 인간 행동을 모방할 수 있다면, 왜 기계는 인간처럼 생각할 수 없겠는가?'라는 질문을 스스로에게 던졌다.

Q1. What was Alan Turing famous for?
-He was famous for _____ and _____ of an electronic stored program.

Q2. In 1950, Alan Turing wrote about _____.

Q3. Find in the passage what the underlined 'his research paper' in sentence ❻ contributes and write it in Korean.

☞

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◆ ■ 접속사 that : 명사절을 이끄는 접속사로, that절은 문장에서 주어, 목적어, 보어의 역할을 한다.

ex] That 장원영 is only 22 years old is amazing.

-> It is amazing that 장원영 is only 22 ~.

ex] I think (that) Yu-na is a good student.

ex] The truth is that 소정 loves 금정 high school students.

☞ 다음 우리말과 같은 뜻이 되도록 주어진 말을 이용하여 문장을 완성하시오.

<보기> my homeroom teacher/ know/ number/ miracle

1. I know _____.

(나는 담임쌤이 나를 사랑하신다는 것을 안다.)

2. The problem is _____.

(문제는 내가 그(녀)의 전화번호를 모른다는 것이다.)

3. _____ we belong to the same class.

(우리가 같은 반인 것은 기적이다.)

[Paragraph #3] **1956: The term "artificial intelligence" was coined**

❶This question led *Turing* **[to design/ design]** the "imitation game," **[it/ which]** also became known as the "Turing test."

❷The game itself was simple: A human participant would exchange a series of **[typed/ typing]** interactions with two respondents, a computer and a human being.

❸After a set period of time, the participant would **[be asked/ ask]** to state which answers came from the computer and which came from the human being.

❹If the participant failed **[distinguishing/ to distinguish]** one from the other, the computer had passed the Turing test.

❺It might be then inferred **[that/ which]** the computer had the ability to think like a human.

❻*Turing* predicted that this pattern would eventually happen so **[consistently/ consistent]** that machines would be considered intelligent.

❼In the early days of computer science, he already imagined a world in which people could build machines that could "think."

[#3] "Artificial Intelligence" 인공지능

❶이 질문은 Turing이 _____ 하게 만들었으며, 그것은 또한 '튜링 테스트'로 알려지게 되었다.

❷이 게임 자체는 간단했다. 한 명의 _____가 일련의 입력된 상호 작용을 두 응답자인 _____다.

❸일정 시간이 지난 후에, 참가자는 어떤 답변이 _____이고 어떤 답변이 _____인지 말하도록 요청받곤 했다.

❹만약 참가자가 둘을 _____, 그 컴퓨터는 튜링 테스트를 _____한 것이 되었다.

❺그러면 컴퓨터가 _____ _____고 추론되었을지도 모른다.

❻*Turing*은 이러한 패턴이 결국 _____ _____고 여겨질 것이라고 예측했다.

❼컴퓨터 과학의 초기 시절에, 그는 이미 _____ _____을 상상했다.

Q1. When was the term "artificial intelligence"coined? In _____.

Q2. If the human participant could tell the computer's answers from the human's answers, the computer had failed the Turing test. (T/ F)

Q3. Which is NOT true about the Turing test?

a. It involved a participant interacting with both a computer and a human.

b. It was designed to see if a computer could think like a human.

c. Turning thought it was not suitable for machine intelligence.

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◆ **분사구문**: '접속사 S V~'를 더 짧게 분사(V~ing)표현

✓ When he saw her, he smiled.
→ _____ her, he smiled.

✓ Because he was surprised, he couldn't speak.
→ _____, he couldn't speak.

✓ 분사구문에 동그라미 하기: *Seeing Karina, the girl he liked, he suddenly became nervous. He looked at her, smiling shyly. Karina noticed him and smiled back. Embarrassed, he quickly looked away. A moment later, he saw Karina talking with another guy, shocked.*

[Paragraph #4]

From 1964 to 1967, the First Chatbot, ELIZA, Was Developed

❶ELIZA, the first chatbot, was designed by Joseph Weizenbaum, a professor at MIT's artificial intelligence laboratory between 1964 and 1967.

❷It was programmed to communicate with users, playing the role of a psychotherapist.

❸When users typed questions and answers in the input box on the screen, ELIZA would give pre-programmed replies **[using/ use]** a pattern-matching technique.

❹Weizenbaum claimed that ELIZA did not genuinely understand human language and that it was only **[programming/ programmed]** to follow prescripted patterns.

❺However, users' reactions to the program were quite **[surprising/ surprised]**.

❻The users felt like they were talking to someone who understood their input.

❼They shared their worries and thoughts about their lives with ELIZA as if they were talking to a real psychotherapist.

[#4] 1964년부터 1967년 사이에 최초의 챗봇인 ELIZA가 개발되다

❶_____인 ELIZA는 1964년부터 1967년 사이에 MIT의 _____이던 Joseph Weizenbaum에 의해 고안되었다.

❷그것은 _____하도록 프로그래밍이 되었고, _____을 했다.

❸사용자가 _____을 입력하면, ELIZA는 패턴 매칭 기법을 사용하여 미리 프로그래밍이 된 답변을 주었다.

❹Weizenbaum은 ELIZA가 인간 언어를 _____고, 단지 사전에 미리 짜여진 패턴을 따르도록 프로그래밍이 되었을 뿐이라고 주장했다

❺그러나, 프로그램에 대한 _____은 꽤 놀라웠다.

❻사용자들은 그들이 _____하고 있는 것 같다고 느꼈다

❼그들은 마치 _____ 그들의 걱정과 삶에 대한 생각을 ELIZA와 함께 나누었다.

Q1. What does "It" in sentence ❹ refer to?
☞

Q2. What is not true about ELIZA?
a. Weizenbaum designed it.
b. It played the role of a soldier.
c. It used a pattern-matching technique.

Q3. The designer of ELIZA claimed that it could **(genuinely/ not fully)** understand the human language the user typed.

Q4. The term "artificial intelligence" was coined **(before/ after)** ELIZA was developed.

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◆ 명사절을 이끄는 접속사 if: ~인지(아닌지)
- 주로 동사의 목적어 절에 사용
✓ I wonder ____ she will come to the party.
✓ Tell me _____.
(너가 시간이 더 필요한지를 나에게 말해줘)

◆ 조건의 부사절을 이끄는 접속사 if: (만약 ~라면)
- Minji will be disappointed if I don't go to her party next week.
- You may have difficulty concentrating in class if _____.

[Paragraph #5] In 2011, a Neural Network Finally Identified Images

❶In 2011, computer engineer Jeff Dean and Stanford University computer science professor Andrew Ng founded a deep learning artificial intelligence research team and created one of the **[large/ largest]** neural networks ever built.

❷Their goal was to make the network act like a human brain and train **[itself/ it]** to recognize the images without any human intervention.

❸A network of 16,000 computer processors **[was/were]** connected, and these processors were presented with 10 million random images from online videos.

❹The engineers didn't instruct the neural network to come up with any specific information or classify the images.

❺They waited to find out if the neural network could naturally find patterns in the video images and form classifications in an unsupervised manner.

❻After the neural network **[being processed/ processed]** the image data for three days, it was able to detect three images: a human face, a human body, and a cat.

❼This seemingly simple research represented a significant advancement in the unsupervised image recognition tasks of neural networks and marked the beginning of a new era of artificial intelligence research.

[#5] 2011년, 신경망이 마침내 이미지를 인식했다

❶2011년에, 컴퓨터 공학자 Jeff Dean과 스탠포드 대학의 컴퓨터 과학 교수 Andrew Ng은 딥러닝 인공지능 연구팀을 설립하고, 역대 만들어진 _____ _____를 개발했다.

❷그들의 목표는 이 신경망이 _____ _____하도록 만들고, _____ 없이 이미지를 _____하도록 훈련시키는 것이었다.

❸16,000개의 컴퓨터 프로세서들의 네트워크가 연결되었고, 이 프로세서들에게는 온라인 동영상에서 가져온 1,000만 개의 무작위 이미지가 제공되었다.

❹공학자들은 신경망이 _____ _____하도록 지시하지 않았다.

❺그들은 신경망이 자연스럽게 비디오 이미지에서 _____고 _____ _____할 수 있는지를 알아보기 위해 기다렸다.

❼신경망이 이미지 데이터를 3일 동안 처리한 후, 인간 얼굴, 인간 몸, 그리고 고양이라는 _____할 수 있었다.

❽이 _____는 신경망의 비지도 이미지 인식 작업에서 중요한 발전을 나타냈으며, _____ 의 기점이 되었다.

Q1. How many random images were presented to the neural network?
-_____ were presented.

Q2. ☞ In 2011, Jeff Dean and Andrew Ng created a _____ that acted like a human brain.
☞ Presented with 10 million random images, the neural network _____ed three images: _____ _____.

Q3. Jeff Dean and Andrew Ng wanted to see if neural networks could find patterns of images **(with/ without)** human intervention.

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◆ 병렬구조: 등위/상관접속사로 연결되는 어구는 '품사'와 '역할'이 같아야 한다.

✓ I love _____ and _____.
✓ He is **both** _____ **and** _____.
✓ I lost _____ **either** in the library **or** in the subway.
✓ He _____ forgot the meeting, _____ didn't apologize for forgetting it.
✓ We must analyze the problem thoroughly and **(find/ finding)** an adequate solution.

[Paragraph #6]

2016: AlphaGo defeated a human go champion.

❶Many experts predict **[that/ which]** artificial intelligence will impact every aspect of 21st century life.

❷AI will improve the way we work, play, and communicate.

❸Along with hope and excitement, there are also concerns.

❹Some people argue that AI will take our jobs and eventually **[controls/ control]** human society.

❺What will happen when we live together with a "thinking machine" truly **[depends/ depending]** on us.

❻We must keep asking ourselves 무엇이 우리를 AI와 다르게 만드는지 **(makes/ what/ different from/ us/ AI).**

❼We must ensure that artificial intelligence is only used for the betterment of society.

[#6]
2016: AlphaGo가 인간 바둑 챔피언을 이겼다.

❶많은 전문가들은 인공지능이 _____에 영향을 미칠 것이라고 예측한다.

❷AI는 우리가 _____을 개선할 것이다.

❸희망과 흥분과 함께, _____다.

❹일부 사람들은 _____를 빼앗고 결국 _____할 것이라고 주장한다.

❺우리가 _____ 때 무슨 일이 일어날지는 진정 _____.

❻우리는 _____를 계속 스스로에게 물어야 한다.

❼우리는 _____을 위해서만 사용되도록 확실하게 해야 한다.

Q1. What are the concerns about AI?

Q2. In 2016, AlphaGo **(defeated/was defeated by)** a human go champion.

Q3.윗글의 밑줄 친 우리말과 일치하도록 괄호 안의 단어를 사용하여 영작하시오.
☞

Q4.6+What do you think of the argument "AI will eventually control human society"?
→ I (don't agree/ agree) with it. _____

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