

Lesson 6 Explore the Future

Imagine Living with AI

When you think about Artificial Intelligence (AI), what comes to mind? Many people recall the historic Go match between AlphaGo and Lee Sedol in 2016.

Against everybody's expectations, AlphaGo, an AI Go-playing program, defeated Lee Sedol, who was then the top-ranked Go player in the world, with an impressive score of 4 to 1. This sensational event

captured the world's attention and sparked widespread interest in AI. Artificial Intelligence refers

to the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

Computers and machines equipped with AI can display human-like capabilities such as reasoning, learning, planning, and creativity. Indeed, it is difficult to define AI because AI is not just computer software but a complex combination of diverse technology and innovations.

The efforts to create AI began over 70 years ago with Alan Turing's paper Computing Machinery and Intelligence, published in 1950. Turing asked the question of whether computers would one day be able to think and introduced many of the fundamental concepts of AI. He paved the way for John McCarthy and other renowned computer scientists to develop AI programs. However, before Alan Turing introduced the scientific concept of AI in his academic paper, it was science fiction that sparked and maintained discussions about AI, captivating the interest of the public and driving the field in a positive direction. The advancements described in science fiction were later confirmed and accelerated by scientists such as Turing.

The 1942 short story Runaround by Isaac Asimov is notable for introducing the concept of the Three Laws of Robotics, a set of principles that human-like robots should follow. The laws briefly stated the following: A robot must not harm a human being, must obey orders from humans, and must avoid actions or situations that could harm the robot itself. The laws serve as guidelines to keep humans safe in interactions with robots. Asimov later added the Zeroth Law, which states that "a robot may not harm humanity, or, by inaction, allow humanity to come to harm." This principle was based on Asimov's concern about the potential threats that robots could pose to humanity as a whole.

Asimov's visionary and imaginative argument has not only inspired generations of roboticists and scientists but also provided insightful guidance to global leaders as they plan policies for the future of AI and robotics. For instance, in February 2017, the European Parliament adopted a resolution calling for developing legislation on robotics based on Asimov's laws. Another similar action followed in April 2021. The European Commission proposed new regulations on AI, known as the AI Act – the first law on AI by a major regulator anywhere. These actions confirm that robots and AI must serve humanity under any circumstances.

With the rapid development of AI, the idea of having companion robots as friends for humans has become more likely. Kazuo Ishiguro's novel *Klara and the Sun* presents a thought-provoking issue of what would happen if we regard robots as humans. In the novel, Klara is an "artificial friend" that provides companionship to Josie, a human child. The story takes place in a future where children can be genetically engineered to be smarter, but the process is risky and can result in serious or even deadly illnesses. Most children attend school online, and some of them have robot friends like Klara to make up for their lack of social interactions. The book is told from Klara's perspective, and readers sometimes find themselves so deeply involved in the story, forgetting that Klara is a robotic creature, not a breathing human being. It is unclear whether we will ever have sophisticated robots with emotions like Klara, but the next decade may bring the production of very efficient companion robots. Since the development of ELIZA, the first computer chat program designed to imitate a psychiatrist, in 1966, and Pepper, the first social humanoid robot, in 2014, AI for companionship has achieved remarkable advancement through many attempts and failures.

Today, many commercial companion robots are used in senior care to help solve the widespread problem of depression and loneliness in aging adults even if they are not as complex or advanced as Klara.

Whether people will treat companion robots like Klara as mere marvelous technological inventions or as something that can replace human companionship remains to be seen.

AI is becoming more common and accessible to the everyday person, with its applications expanding into social uses. Some futurists predict that AI could surpass human cognitive abilities in all tasks, raising concerns about the possibility of AI trying to rule us.

Although this forecast may seem premature, it is time to start discussing the potential risks and ethical concerns associated with the development of AI.

Science fiction has played a significant role in shaping our understanding of AI and its potential impact on our lives, and it will continue to do so in the future. The future of AI depends not only on technology developers but also on ordinary users like us. Will AI take away our jobs and make our future miserable, or will it bring happiness and prosperity? The answer lies in how we understand and utilize this technology.

6과 Read More

Camera Traps for Animal Conservation

Have you ever heard of a bear that took selfies?

Officials at a park in Boulder, Colorado, shared a fascinating story of a bear that took around 400 selfies in front of a camera trap set up for wildlife research and conservation. A camera trap is a camera connected to an infrared sensor. When warm objects like animals pass by, it captures images or videos of them. In the past, examining camera trap data involved a manual review of millions of images or videos, which required a lot of time and was not easy to do without making errors. The data, however, can now be analyzed with greater accuracy and effectiveness thanks to AI-powered algorithms.

Camera traps are helpful in monitoring endangered species. They operate in the field to continuously watch a habitat, with minimal disturbance to wildlife.

This makes it possible to get data on species' locations and population sizes to determine whether they are thriving or struggling. For example, by photographing a baby Javan rhino, the world's rarest species of rhino, camera traps revealed a surprise: the rhinos were breeding.

In addition, camera traps are employed as a new tool in the fight against poaching by providing real-time information when they detect illegal activities, such as poachers setting nets or entering protected areas. This enables officials to respond quickly and effectively, which increases the chances of arresting poachers and preventing crimes against wildlife. Although the cost of camera traps can be an issue, they demonstrate a positive impact of technology on wildlife conservation.