

## **A Research on the Trends in the Development of Digital Content Related to Pets**

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### **Abstract**

*The history of animals raised by humans began in prehistoric times, and in modern times they were classified as livestock and pets. As social awareness changes, the term 'companion animal' is used instead of 'pet', and related content has also become more diverse. Recently, digital contents such as virtual pet training, memorial space, and AI health diagnosis using metaverse and AI technology are developing. Developed digital content makes pet care convenient and provide emotional support and economic benefits to users. As technology develops and content becomes more diverse, the relationship between pets and humans will become closer in the future, and related laws and ethical guidelines will need to be established.*

**Keywords:** *Companion animal, Pet, AI, Metaverse, Digital Contents, Care, Memorial*

## **1. Introduction**

### **1.1 Background**

The history of animals raised by humans dates back to prehistoric times. There are records of dogs being raised by humans about 12,000 years ago, and cattle, horses, pigs, and goats starting about 10,000 years ago. Animals raised by humans played a major role in providing resources related to food, clothing, and shelter. Animals that were purified and improved by humans and came to live together with humans were defined as livestock.[1]

As civilization was formed and culture developed, the importance of activities that provide interest and emotional stability increased. Animals that can enjoy physiognomic appeal or are likable in their interactions with humans began to live in living spaces close to humans and be raised by humans. It can be assumed that these animals are referred to as 'pets.' Pets are defined as 'animals that can be kept close to one another,

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touched, and loved,' emphasizing the concept of being owned for human enjoyment.[2]



Figure 1. Prehistoric hunting dog petroglyphs discovered in Saudi Arabia



Figure 2. <Portrait of the Arnolfini Couple>, Jan van Eyck, 1434

As human society modernizes, the number of households that care for animals at home has increased.

Social attitudes toward animals are changing. It is special to see a change in the use of the term 'companion animal' rather than the term 'pet' in everyday life. The fact that the expression 'pet' means a toy or an expression of play that has become stronger and can move comfortably is an argument that the definition of 'companion' is correct.[4] As a result, the use of the term companion animal when referring to animals in the home has decreased significantly.

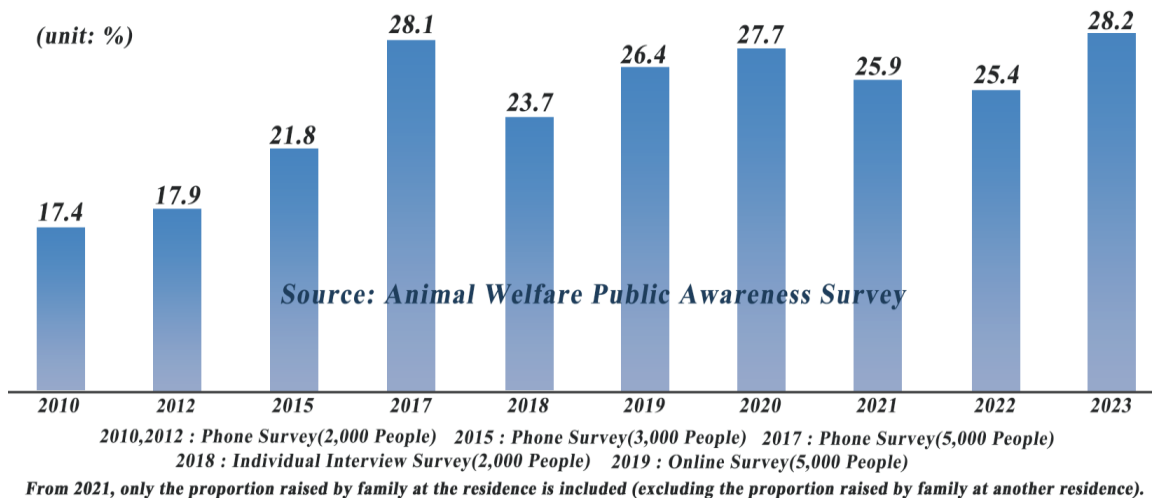


Figure 3. Domestic companion animal raising rate in Korea[3]

In this way, the meaning between humans and farmed animals has been classified or changed according to human history. This can be categorized and organized into dictionary meaning and cultural meaning as follows.

**Table 1. Semantic classification between humans and farmed animals**

Categorization	Dictionary meaning	Cultural meaning
Livestock	Purified and improved by humans Animals that live together with humans	<ul style="list-style-type: none"> <li>Animals that provide assistance in human life (food, clothing, and shelter).</li> </ul>
Pet	During your stay cute animals	<ul style="list-style-type: none"> <li>Animals raised by humans for their beautiful appearance or likable behavior.</li> </ul>
Companion animal	Animals raised for companion purposes	<ul style="list-style-type: none"> <li>Animals that share emotional communion with humans and live together</li> </ul>

## 1.2 Purpose of Study

As a distinction was made between livestock and pets, and the use of the term companion animal increased rather than the term pet, interest in animals that come close to humans increased. Accordingly, content related to pets also began to diversify. In the case of classical contents, it was often a simple information record in the form of text produced as a book. With the advent of video media, it has become possible for people to receive realistic information, such as interviews with experts. Internet (computer network) services have made it possible to access the various information mentioned above within websites. Since the 2010s, the development of smartphones and various applications has made it possible to access information and communicate with people over networks, free from location constraints.

As the importance of non-face-to-face spaces has expanded due to the COVID-19 pandemic, content utilizing 'Metaverse,' a 3D-based virtual world where daily life and economic activities are possible using avatars, has begun to receive attention.[5] Additionally, the usability of content is rapidly developing with the advent of AI (artificial intelligence). Among fields related to companion animals, content utilizing new systems is continuously being developed in the care aspect.

## 2. Modern Companion Animal Contents

### 2.1 Virtual Companion Animal Care Contents

In the metaverse environment, there is a service that provides the experience of raising a virtual companion animal rather than a real. These are designed to allow users to interact, nurture, and bond with their virtual companion animal. It is also meaningful in that it can provide the experience of raising a pet to people who cannot raise a pet due to environmental conditions or personal problems.



Figure 4. Peridot

A representative example of virtual companion animal care content is 'Peridot', an augmented reality (AR) pet training game developed in 2023 by 'Niantic', an American location technology-based augmented reality production company. Peridot, a virtual magical creature, can move vividly within the user's mobile device using real-time mapping and location-based AR technology [6]. You can interact with the real world on the screen by moving the camera and touching the screen, and it is programmed to recognize differences in objects, giving it a sense of reality. Starting in 2024, the 'Speak' function will be updated, allowing you to see how the dots react according to the content of the user's voice, allowing for a more refined sense of realism.

**2.2 Companion Animal Virtual Memorial Space Content**

The companion animal virtual memorial space serves as a place where users can permanently remember and share memories with their companion animal through digital materials. Users can update the data (photos, videos, voices, etc.) left behind by their companion animal while they were alive and save them in their own space to recall memories with their companion animal that have passed away. It is significant in that it saves the travel time required to visit the memorial space and allows you to enjoy and reminisce about the vivid appearance of your companion animal when it was alive. It can also be used as a solution to provide comfort to people suffering from mental disorders caused by separation from their companion animal, such as Pet Loss Syndrome.[7]

The 'Metaverse Forest of Memory' service, a joint venture between pet funeral home PetForest and virtual tech group Olim Planet, is a companion animal memorial space created in the metaverse environment. Users can commemorate and reminisce about their companion animal lives by uploading digital materials to themed spaces. The virtual space is overall designed to be similar to the actual memorial space, and provides a guestbook function so that visitors to the Metaverse memorial space can leave record of their visit.[8]



Figure 5. Metaverse Forest of Memory

### 2.3 Companion Animal AI Contents

Currently, content using AI that is emerging in the companion animal care field is mainly developed with a focus on acquiring information related to behavior analysis or health diagnosis.

AIPOPET, a companion animal health care startup, introduced an AI app called 'TTCare' at CES 2023, the world's largest IT exhibition. When you take a picture of your pet's eyes or skin, artificial intelligence analyzes the area and informs the user of the possibility of disease. This is the result of learning by collecting more than 2 million pieces of data through visits to places with many companion animals, such as animal hospitals. [9]

At CES 2024, more companion animal care content equipped with AI technology appeared. The AI-based autonomous robot introduced by Augmen Robotics takes care of companion animals on behalf of humans. You can check the condition of your companion animal at home through audio and video and provide meals or snacks. It is also possible to learn their behavior and respond to unexpected situations. The 'Galaxy Smart Tag 2' model produced by Samsung Electronics is a wearable device that is attached to companion animal. Through the walking mode, information is delivered to the user by identifying the route and time they travel, measuring distance, and activities such as eating, drinking water, and resting.

Users who use companion animal AI content can analyze their behavior and diagnose their health condition early, saving time and costs of visiting animal hospitals. Devices based on AI content provide convenience to users by replacing some of the human roles in pet care through learned data.[10]



Figure 6. Ogmen Oro AI Robot & Galaxy smart tag 2 displayed in CES 2024

### 3. Conclusion

Over time, animals took care by humans were classified according to their reproductive purposes, and the definitions for each became more specific. The term companion animal refers to animals that are most friendly to humans and live close to them. Accordingly, content has developed with a focus on convenience in caring for pets.

Methods of using content and expected effects will become more diverse. It is actually a care space for elderly dogs. As in the case of 'Old dog's home', the metaverse environment can be used to create a virtual play space or a customized activity program for elderly pets. If you develop training content based on a virtual environment, you can learn effective training techniques in advance through interaction with experts before applying the training content to reality. As AI technology has been developed to collect companion animals' biometric records, it is highly likely that technology will be developed to use AI to diagnose the pet's health status and share the treatment process in a metaverse environment.

The number of people having companion animal is increasing every year, and the market is also increasing significantly.[11] Content containing the latest digital technology makes the pet market more convenient and efficient, contributing to a better life for companion animal and the satisfaction of those who care for them. Therefore, the relationship between companion animals and humans is expected to become closer in the near future. The definition of companion animal is refined and terms other than companion animal may be used. In response to these changes, continued research on animal welfare will be necessary, including revision of laws targeting companion animals and establishment of moral values.

The proportion of pet-related content utilizing AI systems will increase in line with trends, and digital content based on the metaverse environment will continue to emerge. In order to prepare for this, it is necessary to establish ethical guidelines for the production and use of companion animal related content using artificial intelligence and confirm response plans that take diversity and accessibility into consideration.

## References

- [1] Encyclopedia of Korean National Culture, ‘livestock’, <https://encykorea.aks.ac.kr/Article/E0000383>
- [2] Seo Yun Lee, “Sociological meaning of ‘pet’ in modern Korean society”, Pusan National University, pp. 23, Feb 2009.  
DOI: <https://www.doi.org/10.23172/pusan.000000046812.21016.0000042>
- [3] Daily vet, “The proportion of the population raising pets in Korea is 28.2%... Best ever”, Mar 2024.  
<https://www.dailyvet.co.kr/news/policy/206485>
- [4] Rural Development Administration National Institute of Livestock Science,  
[https://www.nias.go.kr/companion/new\\_petBoard.do?cmCode=M170718155107250](https://www.nias.go.kr/companion/new_petBoard.do?cmCode=M170718155107250)
- [5] Sun-Young Ko, Han-Kun Chung, Jong-In Kim, Yong-tae Shin, “A Study on the Typology and Advancement of Cultural Leisure-Based Metaverse”. KTSDE, Vol. 10, No. 8, pp.331 - 338, 2021.  
DOI: <https://doi.org/10.3745/KTSDE.2021.10.8.331>
- [6] Niantic, “Introducing Peridot, Explore the world with cute virtual pets!”,  
<https://nianticlabs.com/news/peridot?hl=ko>
- [7] Si young Choe, Ji su Lee, Yeonbog Choi, “A Research on the Status of Domestic and Foreign Industries Related to Pet Funeral and Pet Loss Syndrome”, Humanities & Society 21, Vol. 14, No. 2, pp. 481-494, Jun 2023.  
DOI: <https://dx.doi.org/10.22143/HSS21.14.2.34>
- [8] Chosen Ilbo, “Pet market worth 8 trillion won... Now is the era of pet economy (Pet + Economy)”,  
[https://www.chosun.com/special/special\\_section/2023/08/30/IYQ7AAJCTBHCDBXUFUHO25ZCCM/](https://www.chosun.com/special/special_section/2023/08/30/IYQ7AAJCTBHCDBXUFUHO25ZCCM/)
- [9] Chosen Ilbo, “When I showed a picture of a dog’s eyes, the AI’s answer was...  
Rapid growth in the pet health care market”,  
<https://www.chosun.com/economy/weeklybiz/2023/02/16/TRYNLAER6FBCLLCSP7YM3LTWOY/>
- [10] Chosen Biz, “[CES 2024] Feeding, opening doors, even real-time location tracking... Pet tech evolving with AI”,  
<https://biz.chosun.com/it-science/ict/2024/01/14/2DUFHMJVLVEYLKRQSAFAMGVOV4/>
- [11] Jea Poong Lee, Sang Yeon Park, Sam Jin Jeong, ‘Implementation of Companion Animal Management System using Smartphone’, The Journal of The Institute of Internet, Broadcasting and Communication (IIBC), Vol. 15, No. 3, pp.51-57, Jun. 30, 2015  
DOI: <https://doi.org/10.7236/IIBC.2015.15.3.51>