

# ANIMAL GO Project

White Paper



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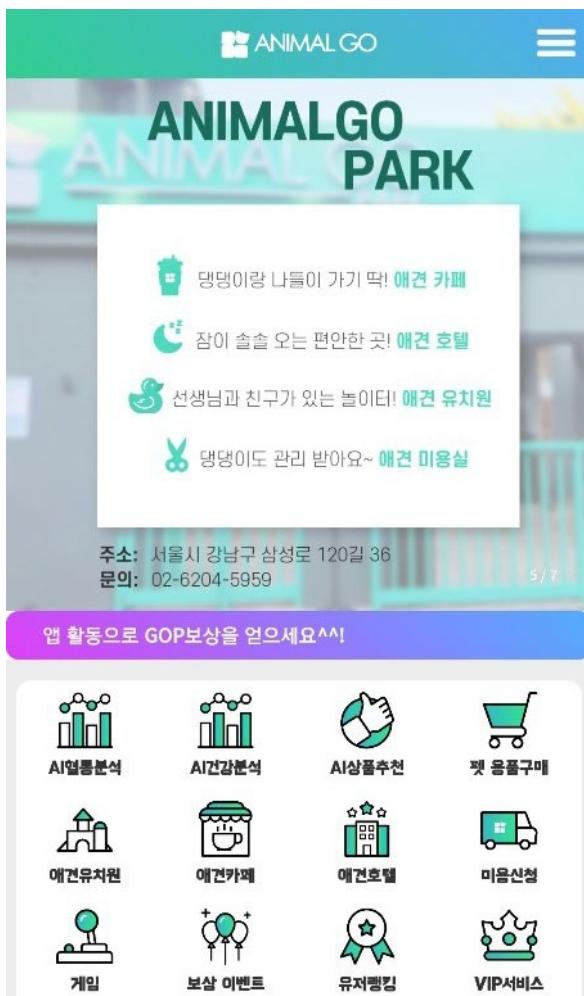
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# ANIMAL GO

## All about Pet



The screenshot shows the ANIMAL GO app's main screen. At the top, it says "ANIMALGO PARK". Below that is a white box containing four service icons: 1. A dog house icon with the text "멍멍이랑 나들이가기 딱! 애견 카페". 2. A crescent moon icon with the text "잠이 솔솔 오는 편안한 곳! 애견 호텔". 3. A chick icon with the text "선생님과 친구가 있는 놀이터! 애견 유치원". 4. A rabbit icon with the text "댕댕이도 관리 받아요~ 애견 미용실". Below this box, the address is listed as "주소: 서울시 강남구 삼성로 120길 36" and the phone number as "문의: 02-6204-5959". At the bottom, there is a blue bar with the text "앱 활동으로 GOP보상을 얻으세요^^!" and a grid of service icons: AI 얼굴분석, AI 건강분석, AI 상품추천, 애견 음료구매, 애견유치원, 애견카페, 애견호텔, 미움신청, 게임, 보살 이벤트, 유저랭킹, and VIP서비스.



## Pet Platform Service

## Precaution

This white paper is designed to provide information to those who are interested in the AnimalGo project that the project team is preparing and working on, or interested in AI, blockchain, and pet-related projects.

The project team does not encourage you to invest, and this white paper is not intended to encourage you to invest. The purpose of this white paper is to provide business models, platform uses, and technical details for the AnimalGo project. Nothing in this white paper is guaranteed to be accurate or warranted because it is not for investment purposes. Also, this white paper is based on the status at the time of its creation, and thus can be modified and changed from time to time, depending on market conditions and project team conditions. In addition, this white paper does not assign objective value even in its present state. Please keep in mind that this white paper only represents subjective opinions of the project team. Even future plans, such as roadmaps, are not definitive statements, but goals of the project team, may not work out as planned. Please note that the project team will not be responsible for the consequences of any action made using or referring to this white paper. In other words, please read this white paper, keeping in mind that the project team has no legal or moral responsibility in connection with this white paper.



## 1. Introduction

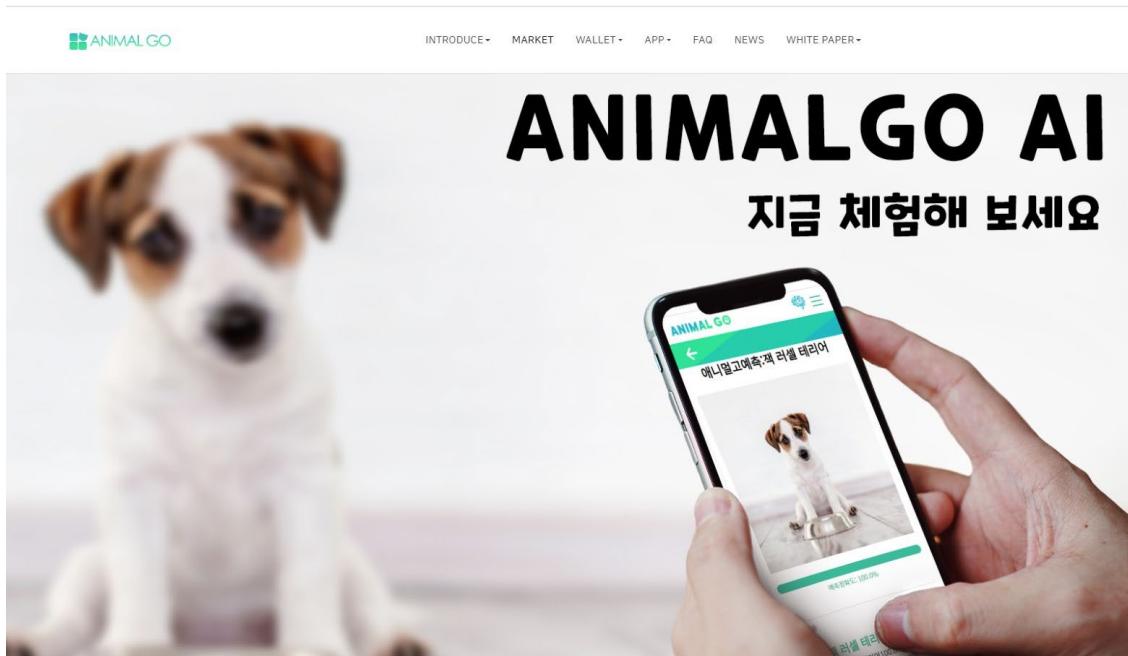
### ANIMAL GO

AnimalGo is a company that develops platform services related to pets.

AnimalGo App utilizes deep learning AI technology to analyze the pedigree of pets and predict health conditions through stool analysis, and enables offline reservations and various functions within the AnimalGo ecosystem. AnimalGo App is gaining huge popularity among pet owners, and currently has more than 100,000 downloads.

In addition, AnimalGo has developed and is operating various apps such as AnimalGo Market App, Go Mini App which is a reward-type pet IP game, and GOM2 App which provides special discount on products as well as GOM2 staking and wallet services.

AnimalGo Park and AnimalGo Beauty are offline ecosystems of AnimalGo. AnimalGo Park provides services such as pet hotel, pet kindergarten, pet swimming pool, pet beauty service, and pet café. AnimalGo Beauty operates visiting beauty salon vehicles for pets. AnimalGo Park and AnimalGo Beauty are expanding across the country through direct management stores and franchises. In any online or offline AnimalGo ecosystem, the GoMoney2 (GOM2) Token can be used as a payment method.

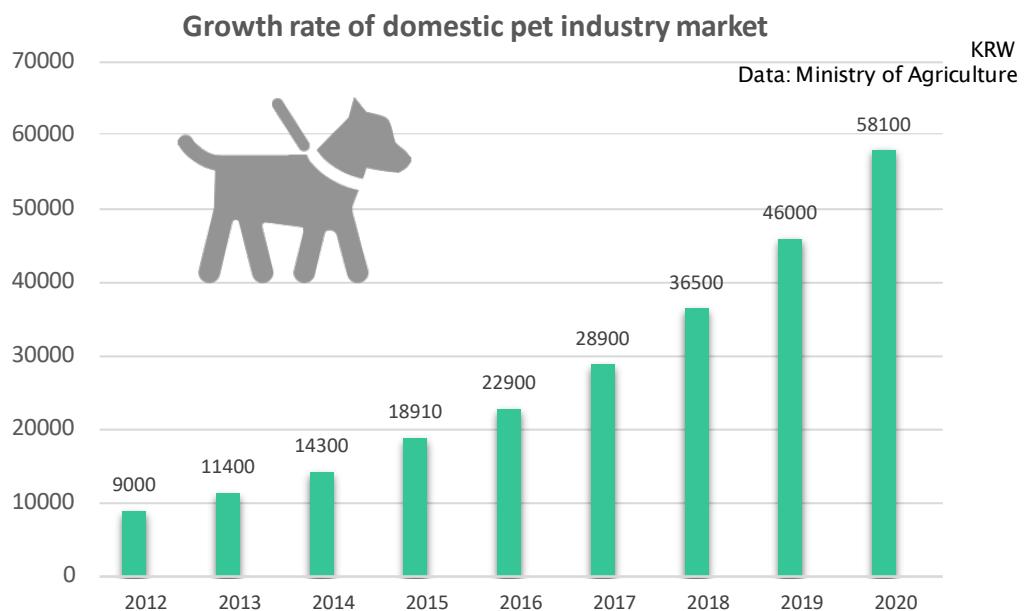


## 2. Background

### Pet Industry Trend

Raising pets is rapidly becoming popular due to the improvement of income levels and the increase of one- to two-person households. Raising a pet is not just about having a companion animal, but about sharing a lifestyle style with it, considering it as a “horizontal relationship” and “another member of family.” Some pets are treated with even more care than humans, eating organic food or products containing healthy ingredients like red ginseng. The size of pet related industries is expected to surpass the growth rate of other industries in Korea, with the figure expected to exceed 6 trillion won in 2020, from 3 trillion won in 2018 and 0.9 trillion won in 2012. (KB Financial Group Management Institute’s 2017 Pet Report)

The industry is also quick to respond in preparation for “Petconomy” (Pet + Economy). The retail industry is opening and operating pet-only brand shops and specialized shopping malls, and competitively launching premium food and supplies. There are even more diverse fields, as related industries are being derived from all areas of human enjoyment, such as pet kindergartens, pet taxis, pet household items, pet AI toys, pet hotels and cafes, IoT-combined CCTVs, location tracking, and feed. There is significant development in pet healthcare for the treatment of chronic and degenerative diseases such as diabetes, high blood pressure, and joint diseases, as well as the market for post-processing of pets including burial and funeral services, which further opens business opportunities for pet insurance markets. As the market continues to expand, the addition of IT technology with the combination of added value and advanced contents is expected to create a variety of new businesses.



### 3. What is AnimalGo ?

#### [ANIMAL GO app](#)

AnimalGo is an integrated platform for pet related services. AnimalGo application provides various pet related services to pet owners. It was released in August 2020 and registered on Google Play Store, Apple App Store, and Samsung Galaxy Store. Since its launch, it has gained huge popularity among pet owners, ranking 2<sup>1st</sup> on the Apple App Store charts and 5<sup>th</sup> on the Android lifestyle section, and has so far recorded more than 100,000 cumulative downloads.

Users can access AnimalGo anytime, anywhere through the mobile app or PC browser. Users can upload photos of their pets and analyze their pedigree with our deep learning technology which has more than 200,000 cases of accumulated data. The photographic data that users upload is accumulated in the servers of AnimalGo and used as learning data for deep learning, continuously increasing the accuracy of deep learning as a result. Like the AI pedigree analysis, users can upload pictures of their pets' stools, and our AI stool analysis can predict the health status of the pets by analyzing the texture and shape of their stools.

Also in the AnimalGo ecosystem is the lowest-priced pet shopping mall in Korea called AnimalGo Market. It recommends products that fit the preference of each user through AI analysis, and all payments can be made using GOM2 and GOP as well as cash and cards.

In addition, through the AnimalGo App, users can reserve and purchase services such as kindergartens, cafes, salons, and hotels in AnimalGo Park across the country, as well as reserve visiting beauty vehicle services operated by AnimalGo Beauty.

The AnimalGo game GoMini is a compensated game, consisting of swing, block, and bulldog games. Users are rewarded GOP when completing quests, and prize events are held every week. Users can play GoMini games for free or for a fee.

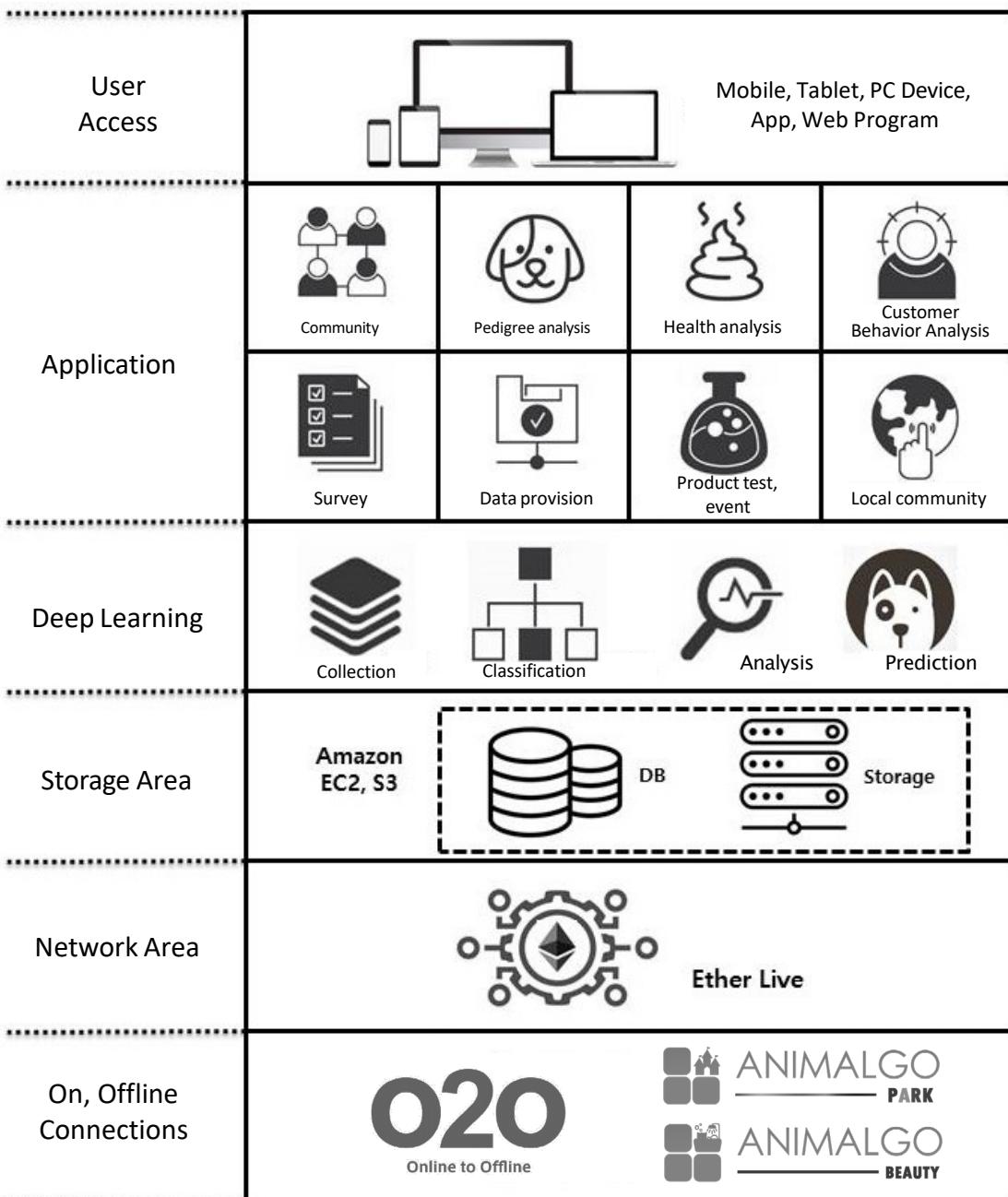
AnimalGo plans to provide additional partnership services such as pet insurance, pet TV, pet walking buddies, pet taxis, pet caregivers, and pet funeral services.

AnimalGo aims for "One Stop, All in One" service platform for pets. We started service in Korea and will gradually expand to global service in the future.

#### 4. AnimalGo Service Organization

[ANIMAL GO app](#)

The AnimalGo service consists of the user access area connected from the app and web through mobile and PC, the application area where users freely use the AnimalGo service, the deep learning area that performs health analysis and pedigree analysis using AI, the storage and blockchain network area that stores the posts and images uploaded by users, and the offline area.



#### 4. AnimalGo Service Organization (Cont.)

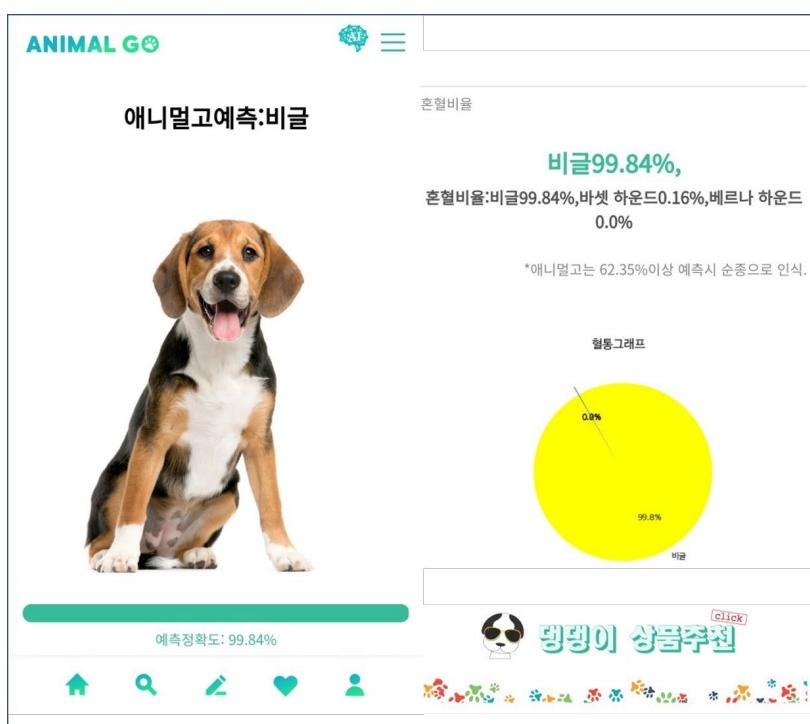
##### ANIMAL GO app

###### 1. User Access Area

Users can use the mobile app or PC browser to access the AnimalGo service anytime, anywhere. Reactive web enables seamless usage on tablet PCs as well as Android and iOS devices. Users can visit AnimalGo Park in the offline, and AnimalGo Beauty is a visiting beauty service that goes to the front of your house.

###### 4.2 Application Area

Users can enjoy various additional services provided by the AnimalGo service. Users can use real-time services such as pedigree analysis and stool analysis. Shopping and game services further enrich the AnimalGo ecosystem. Such services are constantly added to make the AnimalGo service richer and more valuable.



[Pet Pedigree Analysis Results in App]

#### 4. AnimalGo Service Organization (Cont.)

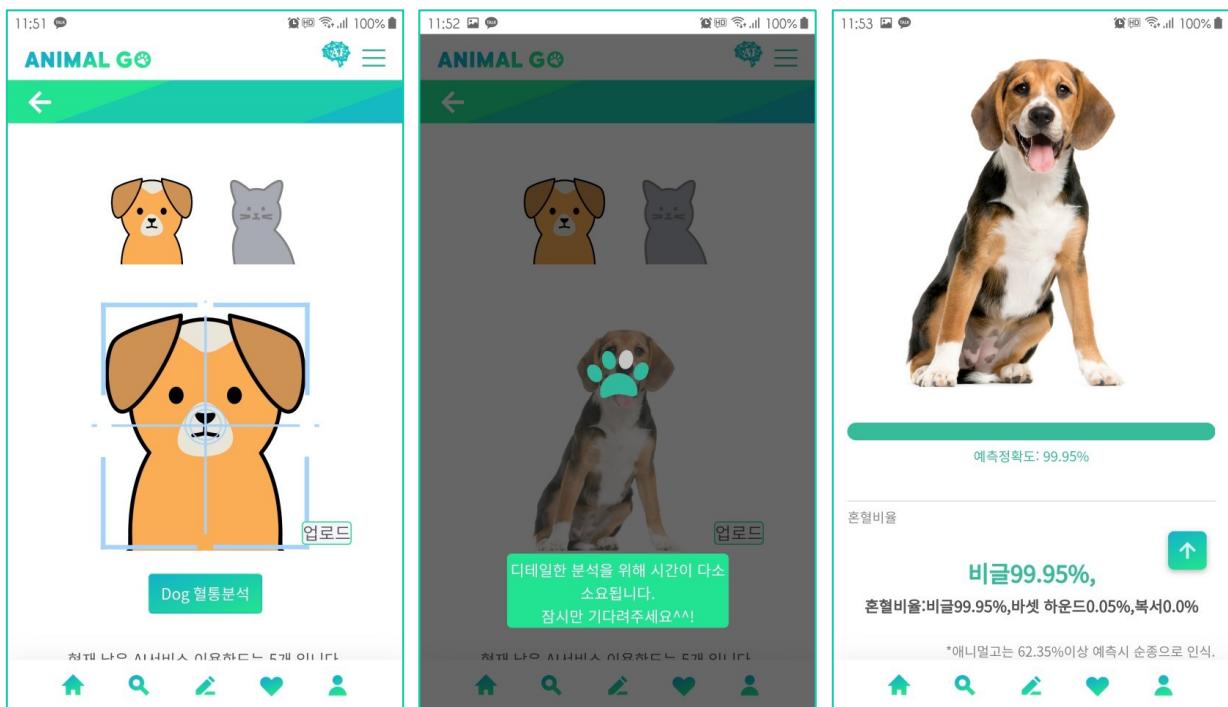
**ANIMAL GO app**

##### 4.2 Application Area (Cont.)

###### 4.2.1 Pet Pedigree Analysis

Pet images posted by users can be analyzed for pedigree identification using deep learning technology. Not only does it recognize the pedigree of dogs, cats, etc., but it can also predict the ratio of mixed blood. Deep learning technology becomes more sophisticated and accurate as the learning dataset grows. While other pet-related applications passively retrieve the types of pets from the user when signing up, AnimalGo App induces users to voluntarily upload images of pets through fun elements like pedigree analysis. This accumulation of photographic image once again becomes the learning dataset for deep learning and leads to a virtuous cycle that increases the accuracy of the analysis.

Photograph → Recognition → Result



[Pet Pedigree Analysis Result Screen]

#### 4. AnimalGo Service Organization (Cont.)

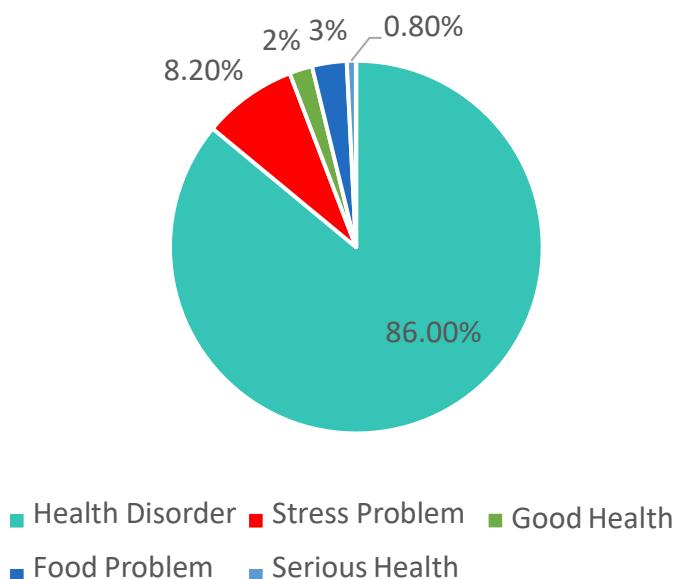
ANIMAL GO app

##### 4.2 Application Area (Cont.)

###### 4.2.2 Pet Health Analysis

The pets' stools can be analyzed to predict their health conditions. Whether the bowel movements are hard, watery, dark, or bright provides information on health conditions, and pet owners can change pet food appropriately or take preemptive action such as visiting the vet. If pet pedigree analysis is a one-off fun factor, pet health analysis is a service that can be used in everyday life. Depending on the results of the health analysis, suitable feed can be recommended or veterinary clinic with good reputation can be introduced through AI.

Stool Analysis Graph



[Results of Pet Health Analysis]

#### 4. AnimalGo Service Organization (Cont.)

[ANIMAL GO app](#)

##### 4.2 Application Area (Cont.)

###### 4.2 AI Product Recommendation

AI-tailored products can be recommended to users based on data accumulated in relation to pedigree and health.

Users can purchase products through

AnimalGo Market.



###### 4.2 AnimalGo Market

AnimalGo Market sells everything about pets, including feed, toys, dolls, houses, snacks, health supplies, beauty, visiting bath service, funeral service, and pet insurance. Also, we are selling AnimalGo private-label products such as AnimalGo Mist, AnimalGo Pad, and AnimalGo Nutrition Treats.



#### 4. AnimalGo Service Organization (Cont.)

ANIMAL GO app

##### 4.2 Application Area (Cont.)

AnimalGo Game

GoMini is a compensated blockchain-based game using AnimalGo characters. As of September 2020, it consists of three types of games: swing, block, and bulldog, and additional games are continually developed and updated. Users can participate free of charge or with GOP, and when users complete certain quests, they are rewarded with GOP. Enabling the use of GOM2-linked GOP in items or game processes helps adjust the supply and demand of GOP within the GOM2 ecosystem. GoMini promotes the participation of users by holding prize events every week.



#### 4. AnimalGo Service Organization (Cont.)

ANIMAL GO app

##### 3. Deep Learning Area

AnimalGo App utilizes deep learning AI technology to provide fun and benefits to its users. When users upload pet photos it recognizes the pedigree of the pet, and pet's bowel movements are analyzed to predict its health. The more pictures users upload, the smarter the app becomes.

#### 4. AnimalGo Deep Learning Technology Overview

AnimalGo pet pedigree recognition utilizes deep learning convolution neural network technology (CNN). Because deep learning is trained on a variety of datasets, building big data must become a priority. To that end, the Animal Go team has built a big data center. As of September 2020, AnimalGo has collected over 3 million images of 174 kinds of dogs, 40 kinds of cats, and 50 kinds of fish. For reliable and accurate analysis, images need to be accumulated continuously. Adding a fun element induces users to naturally upload images, which are in turn used as training data for deep learning for fast and accurate analysis. The virtuous cycle then encourages users to upload images more voluntarily. In addition, uploaded images are permanently stored using blockchain technology, which can be used to prove ownership of the image by the uploader.



[Results of Pet Pedigree Recognition]

#### 4. AnimalGo Service Organization (Cont.)

[ANIMAL GO app](#)

##### 4.5 Pet Pedigree Analysis Process

The pet pedigree analysis process is as follows:

- 1) Python NumPy matrix represents images in numbers.
- 2) The matrix is a three-dimensional pixel RGB (red, green, blue) of sizes 64 X 64, 224 X 224, and 256 X 256.
- 3) Enter several sizes to allow to separate the pet's nose, ears, hair, size, teeth, and tongue and analyze them independently.
- 4) AnimalGo neural networks trained for pedigree from existing data comprehensively judge the pet's nose, ears, eyes, face shape, size, color, tongue, etc. to predict the pet's pedigree.

Neural networks are formed from multiple CNNs, each looking at the ears, nose, teeth, and other features, measuring the pet's connection and similarity to its parents, to finalize the pedigree analysis results.



Blue channel						
Green channel						
Red channel						
	171	200	19	6	...	26
1	24	56	230	1	...	8
2	120	67	89	107	...	13
3	12	216	145	26	...	181
4	0	16	4	45	...	44
...	...	...	...	...	...	...
64	0	78	90	167	...	25
	...	...	...	...	...	...
	12	67	82	141	...	12
	1	2	3	4	...	64

Image array: [64 x 64 x 3]

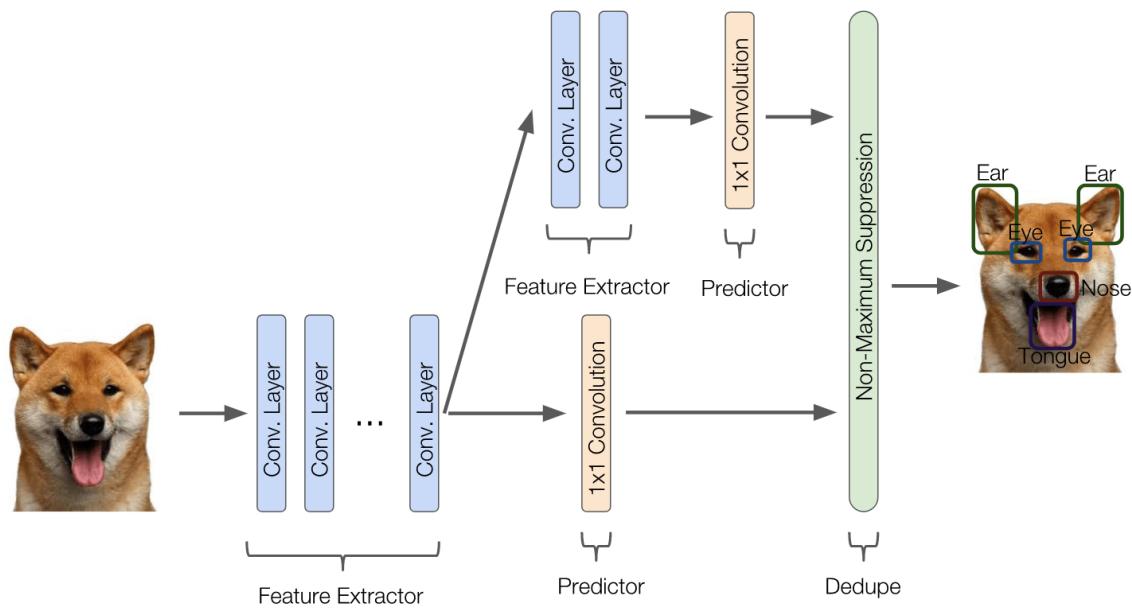
#### 4. AnimalGo Service Organization (Cont.)

[ANIMAL GO app](#)

##### 4.6 Pet Pedigree Analysis Technology

VGG neural networks (Very Deep Convolutional Networks for Large-Scale Image Recognition, K. Simonyan, A. Zisserman), created by Oxford researchers, and MobileNet were customized for pet pedigree analysis technology in the beginning. However, as technology continues to develop, various high-performance neural networks such as ResNet, Xception, and Inception have begun to emerge, and the AnimalGo team is customizing and utilizing these neural network technologies.

Refer to Technical Code section in the white paper (p.29) for details.



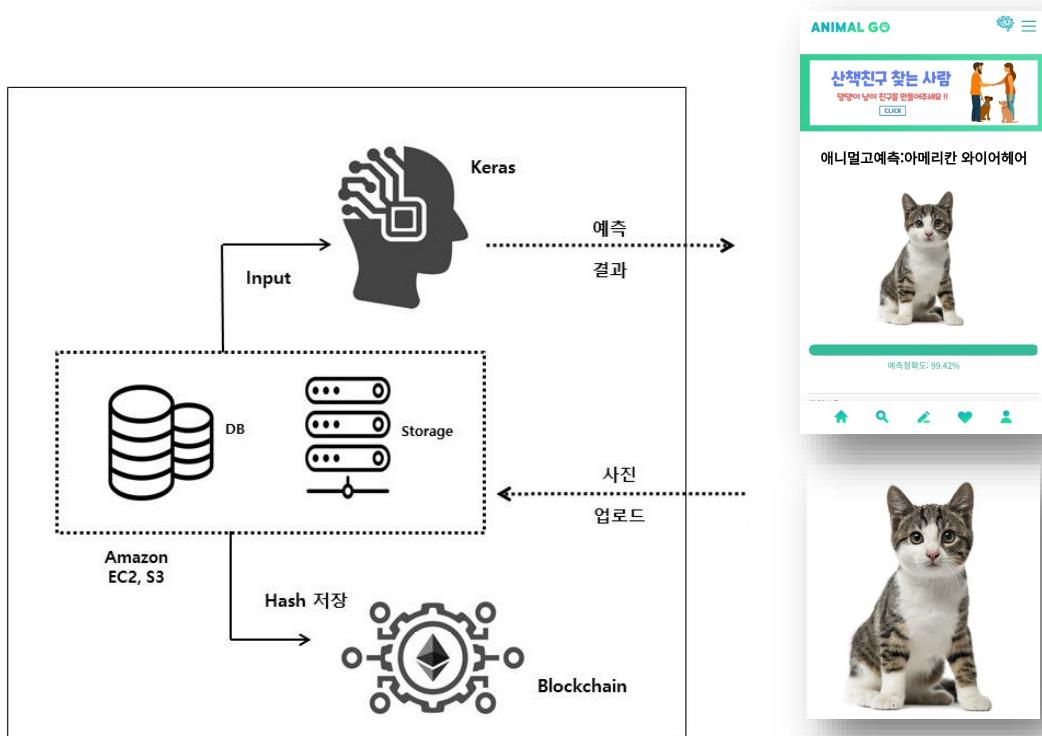
[Pet Pedigree Analysis Using VGG Neural Network Technology]

#### 4. AnimalGo Service Organization (Cont.)

ANIMAL GO app

##### 4.5 Blockchain and Storage Area

For images uploaded by users and items acquired in the game, AnimalGo stores the address in the DB and saves it in the storage area. The hash values obtained through the hash algorithm are stored permanently in the blockchain. This will serve as a witness to the originality of the content. Data stored on storage is used as deep learning training data for analysis of customer behavior and pet pedigree and health analysis. Blockchain, DB, and storage are securely stored using S3 from Amazon AWS, which securely stores customer data and guarantees full-time availability. GOP earned by users through activities can be spent for services such as shopping malls, healthcare, pet hotels, and pet helpers, or be exchanged to GOM2 through the exchange website.



[Blockchain and Storage Area]

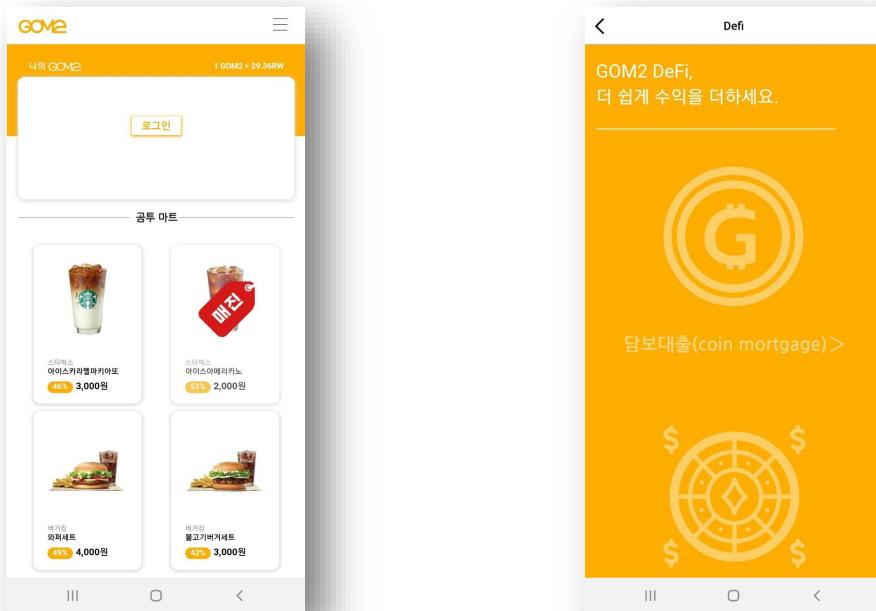
## 5. AnimalGo Service Operation

### ANIMAL GO app

#### 1. GOM2 App

##### 1. GOM2 Mart

There is a hot deal shopping mall called GOM2 Mart in GOM2 App. Products are offered daily or periodical ly at a designated time, and users can purchase products on a first-come, first-served basis. Not only is it limit ed to pet products, but also a variety of products including Starbucks coffee and Burger King hamburger sets are being sold at exceptional discounts. GOM2 Mart increases the inflow of users to AnimalGo and promotes the consumption of GOM2 and GOP.



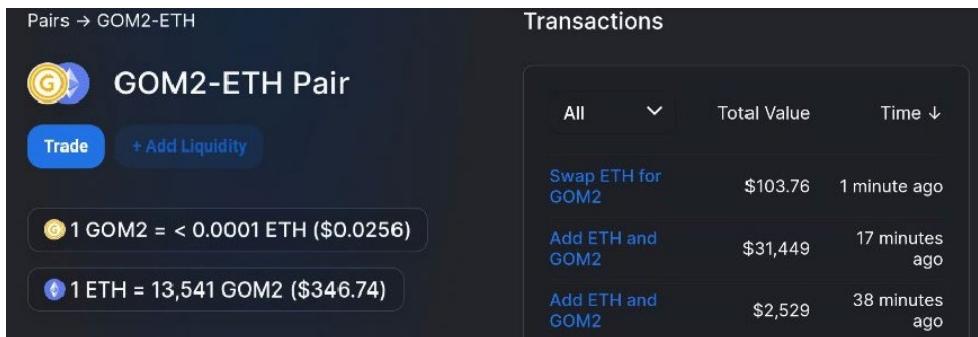
##### 5.1.2 DeFi Service

DeFi stands for Decentralized Finance, whose purpose is to provide various financial services through the blo ckchain technology. GOM2 App's DeFi menu includes Wallet, Deposit, Staking, and Lending services. Lenders can deposit their own GOM2 and receive interest, and borrowers can pay interest and borrow coins suc h as GOM2. The franchisees of AnimalGo Park and AnimalGo Beauty run by AnimalGo can utilize these DeFi s ervices to start an AnimalGo franchise at a low cost.

## 5. AnimalGo Service Operation (Cont.)

[ANIMAL GO app](#)

### 5.2 MoneySwap



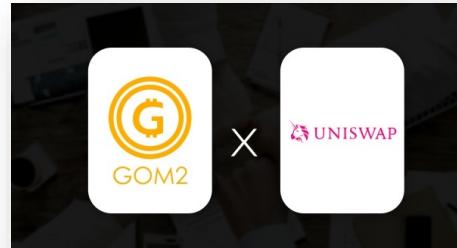
The screenshot shows the GOM2-ETH pair interface. It includes a 'Trade' button and a '+ Add Liquidity' button. Below these are two exchange rate boxes: '1 GOM2 = < 0.0001 ETH (\$0.0256)' and '1 ETH = 13,541 GOM2 (\$346.74)'. To the right is a 'Transactions' section listing three recent swaps:

Action	Total Value	Time
Swap ETH for GOM2	\$103.76	1 minute ago
Add ETH and GOM2	\$31,449	17 minutes ago
Add ETH and GOM2	\$2,529	38 minutes ago

The main purpose of MoneySwap is to swap other coins around GOM2 and provide liquidity. In addition to Ethereum-based coin swap, we are working on swapping Klaytn, EOS, Tron based coins and Bitcoin. We plan to market Korean coins to overseas users and increase liquidity by focusing on project coins developed in Korea and putting them in our swap pool. We are promoting the linking of wallets such as GOM2 exclusive wallet, MetaMask, Trust Wallet, and My Ether Wallet. MoneySwap aims for decentralization, but it is mixed with some central features.

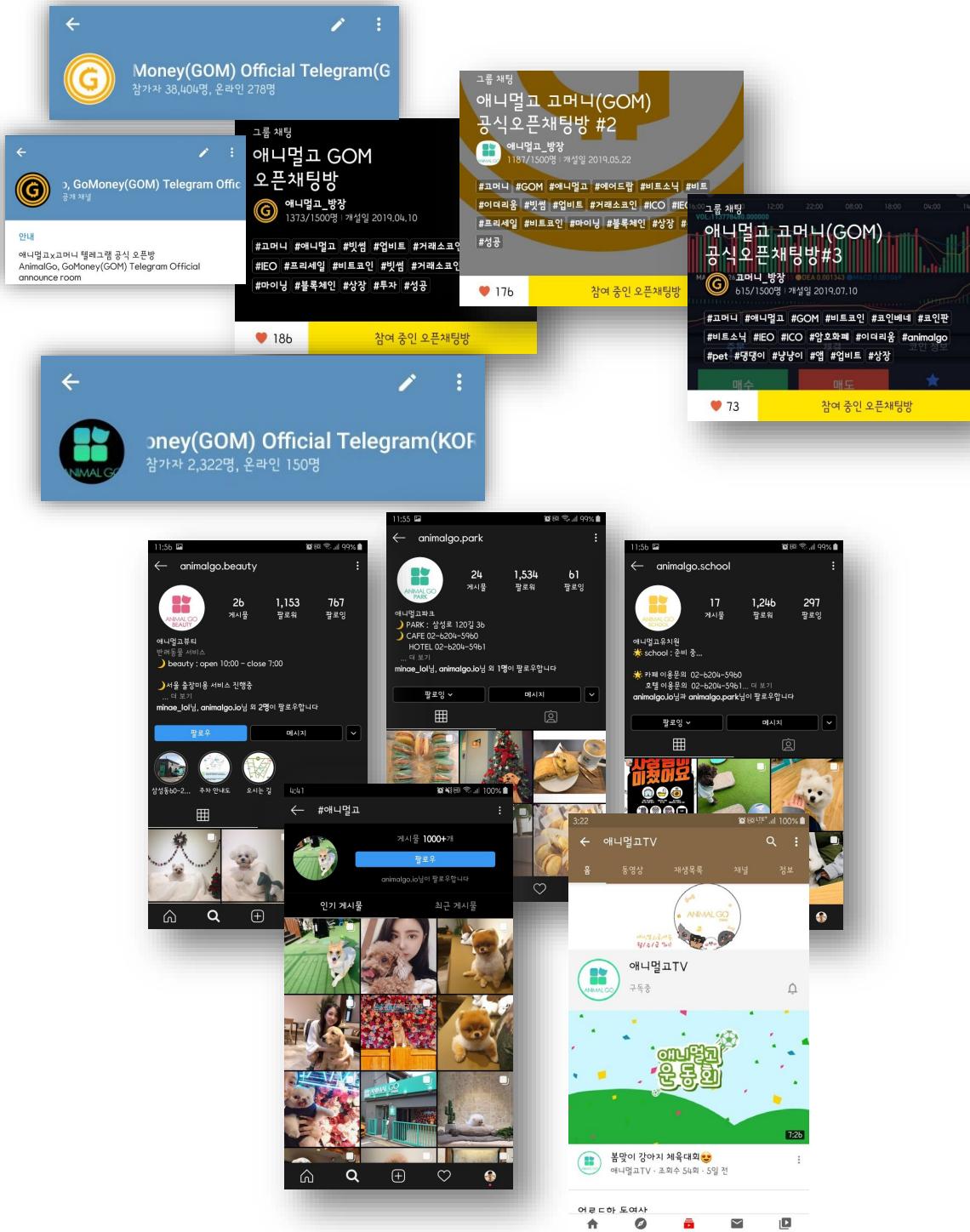
### 6. GOM2 Exchange Listing

Coinone, Bithumb , Liquid, Uniswap, etc. and additional large-cap exchange listing in progress.



## 7. AnimalGo X GoMoney2 Community

Active marketing operation and SNS management such as Telegram, Instagram, KakaoTalk Open Chat, etc.



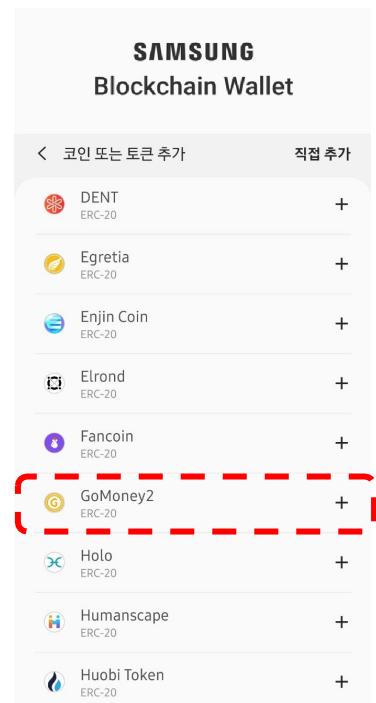
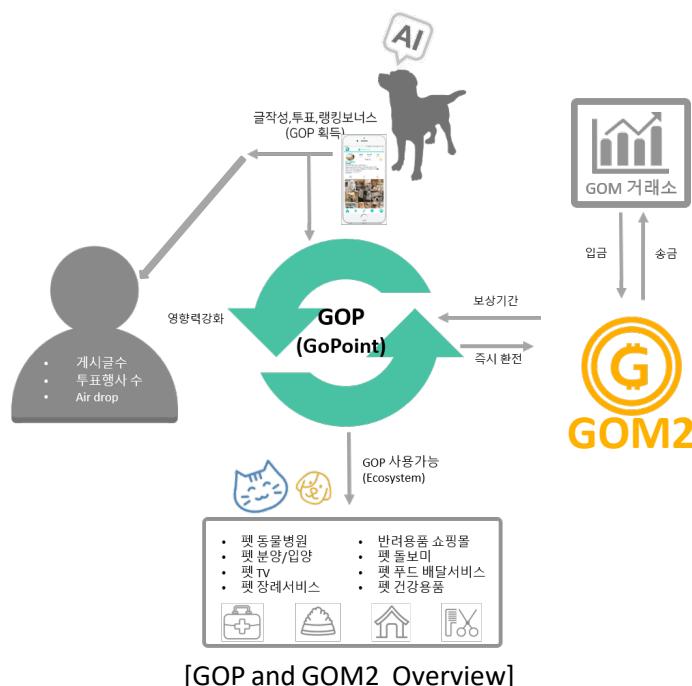
## 6. GOP & GOM2 Policy

### 6.1 Overview

Two common values utilized in the AnimalGo ecosystem are GOP (GoPoint) operated by the blockchain and GOM2 (GoMoney2) available for exchange sale and remittance.

**GOP (GoPoint):** ‘GOP’ can be converted to GOM2, and is acquired through activities within the ecosystem, representing contributions within the platform. GOP is used as an influence indicator for the community, and GOP acquired or purchased can be used as a payment method in AnimalGo Market within the AnimalGo platform. A GOP holder who wants tokenization can convert it to GOM2.

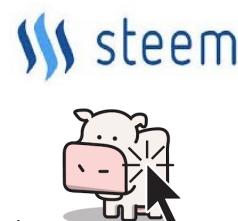
**GOM2 (GoMoney2):** ‘GOM2’ is a cryptocurrency and a means to purchase GOP (GoPoint) required for ecosystem activities. GOP acquired from the ecosystem can also be converted to GOM2 and be traded between individuals through exchanges on the market.



## 6. GOP & GOM2 Policy

### 6.3 Why Use Blockchain?

1. Coin Compensation, Motivation - AnimalGo rewards users for activities in pet SNS and games, and motivates users with the ability to cash in. It has benchmarked CryptoKitties, Cow Clicker, and the rewarding SNS Steem, which at one point dominated Ethereum.



2. Blockchain, Game Interworking – There are countless characters in the AnimalGo game. Each time a new block is created, items, backgrounds, and characters are created according to the Nonce value, enabling the character to be unique. User-to-user trading is also possible in the way exchange blocks are traded.



3. Blockchain, Deep Learning Interworking – AnimalGo has AI technology services such as pet pedigree analysis. Image data is required for deep learning, but such images may be prone to copyright issues. Therefore, images uploaded by users for SNS and deep learning purposes are saved in the blockchain to prove ownership, and are rewarded.



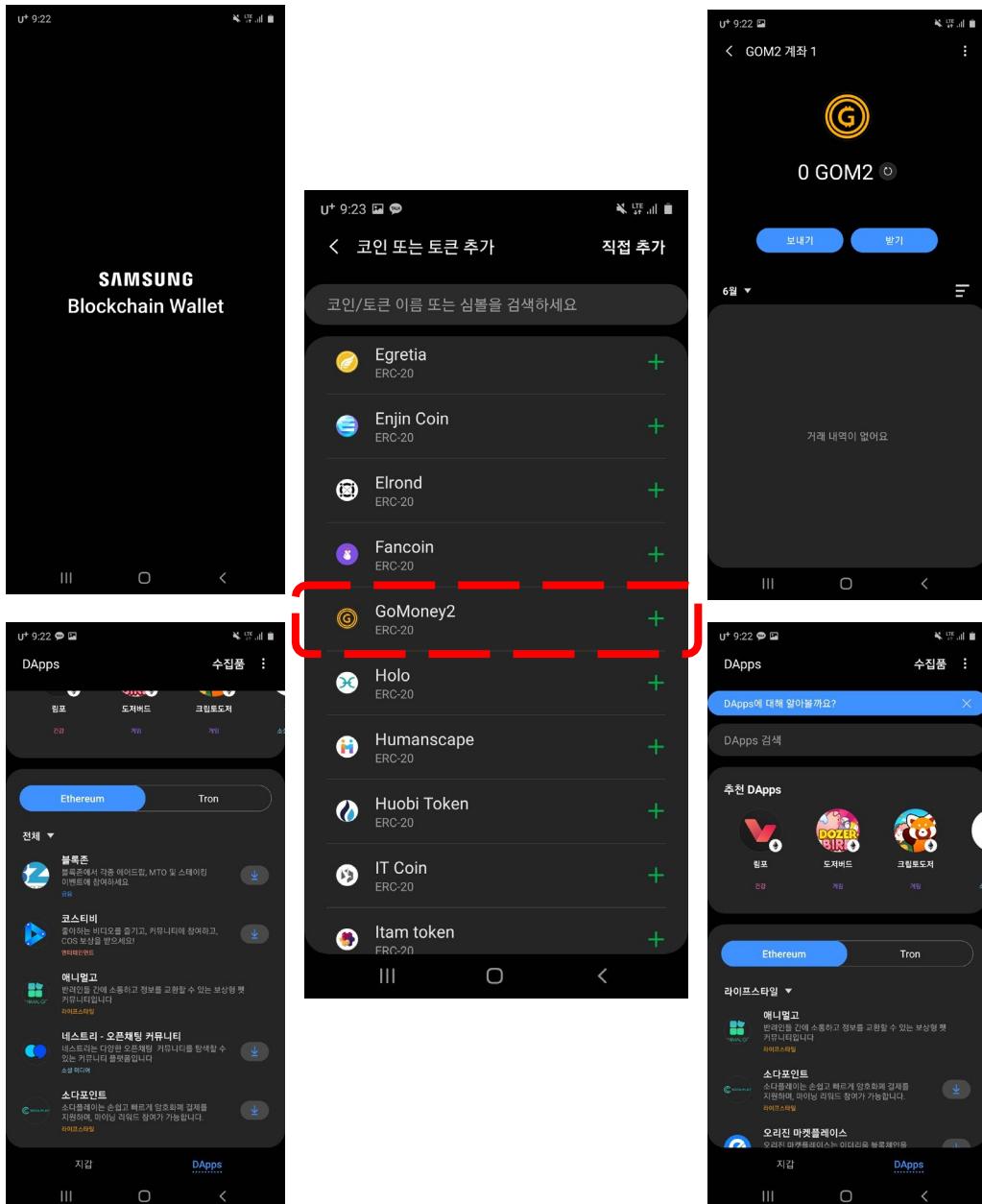
4. Composition of Ecosystem through Coin Use – By using GOM2 Tokens, consumers who purchase products and services within the ecosystem can receive discount benefits when purchasing with GOM2 Tokens, and merchants can use this for marketing means and customer attraction.



## 6.GOP & GOM2 Policy

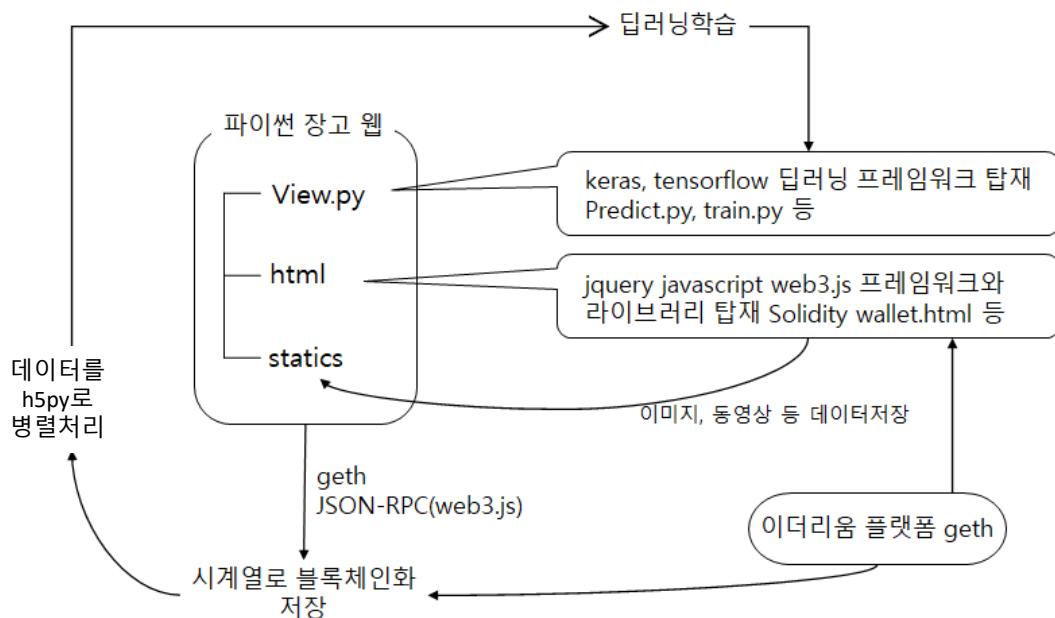
### 6.4 Samsung Blockchain Wallet

Registered for use of GOM2 Tokens in Samsung Blockchain Wallet from Samsung Electronics Galaxy 10. Samsung Electronics' latest mobile phone users can use GOM2 safely and conveniently.



## 7. Technical Code Technology

AnimalGo App uses Keras and Tensorflow deep learning framework for pet pedigree analysis and stool analysis. Images uploaded by the user are stacked on the server and permanently stored in a blockchain network based on ERC-20 by extracting hash values. This clearly identifies ownership of the user's uploaded image. Images accumulated on the server are again used as learning data for deep learning to improve accuracy.



There are four service targets using artificial intelligence deep learning technology:

© pedigree analysis © stool analysis © teeth analysis © sound analysis

© pedigree analysis © stool analysis © teeth analysis uses Keras, an open source library. Among them, we use the VGG16 neural network as the basis after customization and optimization. Pet recognition is divided into primary and secondary classification.

The primary classification identifies species, such as dogs and cats, and the secondary classification identifies more detailed species.

As of September 2020, more than 174 types of dogs and 40 types of cats can be identified.

## 7. Technical Code Technology

© Sound analysis uses Python's SciPy library to analyze the sound wav file. SciPy is an efficient collection of numerical algorithms for signal processing, integration, optimization, and statistics. The module used for sound analysis is the fftpack module in SciPy library, which is used for frequency analysis. In Python, Fourier transforms can be performed using the fftpack module, and Fourier transform is the process of breaking down functions or signals with respect to time into its component frequencies.

Sound analysis currently analyzes frequencies and produces results out of the five categories: stressed, good, alert, scared, and demand.

The functions classified as pet healthcare, such as stool analysis, teeth analysis, and sound analysis are currently less sophisticated and accurate when compared to pedigree recognition, as it is relatively difficult to obtain sufficient training data for deep learning. We are continuing to improve our training data and code.

The quality of machine learning heavily depends on how sophisticated and abundant training data is, so it's basically a battle against training data.

Below is the code for learning images and modeling for pedigree recognition.

The learning model mainly uses two files (load\_deepton.py and train\_animalgo.py).

© **load\_deepton.py** (Because the primary and secondary classifications have same code structure, only a part of the primary classification code is disclosed)

```
from sklearn.cross_validation import train_test_split
import pymysql.cursors
import numpy as np
from PIL import Image
import os, glob
import os.path
def image_1cha():
    animal_dir='./1Cha'
    categories = ["dog", "cat", "human", "fish"]
    nb_classes=len(categories)
```

## 7. Technical Code Technology

```

image_w=224
image_h=224
x=[]
t=[]

for i,idx in enumerate(categories):
    label=[0 for k in range(nb_classes)]
    label[i]=1
    image_dir=animal_dir+"""/"+idx

for dirname,subdirs,file in os.walk(image_dir):
    files=glob.glob(image_dir+"*.jpg")

for j,f in enumerate(files):
    try:
        img=Image.open(f)
        img=img.convert("RGB")
        img=img.resize((image_w,image_h))
        data=np.asarray(img)
        x.append(data)
        t.append(label)
        img.close()
        print("good")
        print(j)
    except:
        print("can not")
        x=np.array(x)
        t=np.array(t)

x_train,x_test,t_train,t_test = train_test_split(x,t,test_size=0.2,random_state=33)

return x_train,x_test,t_train,t_test

```



## 7. Technical Code Technology

©train\_aniamalgo.py (Code for creating a trained neural network model)

```
import numpy as np
import tensorflow as tf
import load_miracle as lm
from keras.layers import *
import matplotlib.pyplot as plt
from keras.optimizers import SGD
from keras.models import Sequential
from keras.callbacks import ModelCheckpoint, EarlyStopping

categories = ["dog", "cat", "human", "fish"]
nb_classes = len(categories)
with tf.device('/gpu:0'):
    x_train, x_test, t_train, t_test = lm.image_1cha()
    x_train = x_train.astype("float32")
    x_test = x_test.astype("float32")
    x_train /= 255
    x_test /= 255
    print(x_train.shape)
    print(x_test.shape)
```



## 7. Technical Code Technology

#1

```
model=Sequential()
model.add(ZeroPadding2D((1,1),input_shape=x_train.shape[1:]))
model.add(Conv2D(64,(3,3),activation='relu')) model.add(ZeroPadding2D((1,1)))
model.add(Conv2D(64,(3,3),activation='relu')) model.add(MaxPooling2D((2,2),strides=(2,2))) model.add(ZeroPadding2D((1,1)))
```

#2

```
model.add(Conv2D(128,(3,3),activation='relu'))
model.add(ZeroPadding2D((1,1))) model.add(Conv2D(128,(3,3),activation='relu')) model.add(
MaxPooling2D((2,2),strides=(2,2))) model.add(
ZeroPadding2D((1,1))) model.add(Conv2D(256,
```

(3,3),activation='relu')) #3

```
model.add(ZeroPadding2D((1,1))) model.add(Conv2D(256,(3,3),activation='relu')) model.add(ZeroPadding2D((1,1))) model.add(Conv2D(256,(3,3),activation='relu')) model.add(MaxPooling2D((2,2),strides=(2,2))) model.add(ZeroPadding2D((1,1)))
```

#4

```
model.add(Conv2D(512,(3,3),activation='relu'))
model.add(ZeroPadding2D((1,1))) model.add(Conv2D(512,(3,3),activation='relu')) model.add(ZeroPadding2D((1,1))) model.add(Conv2D(512,(3,3),activation='relu')) model.add(MaxPooling2D((2,2),strides=(2,2))) #5
```

```
model.add(ZeroPadding2D((1,1))) model.add(Conv2D(512,(3,3),activation='relu')) model.add(ZeroPadding2D((1,1))) model.add(Conv2D(512,(3,3),activation='relu')) model.add(ZeroPadding2D((1,1))) model.add(Conv2D(512,(3,3),activation='relu')) model.add(MaxPooling2D((2,2),strides=(2,2)))
```



## 7. Technical Code Technology

```

model.add(Flatten()) model.add(Dense(4
096,activation='relu')) model.add(Dropou
t(0.5))

model.add(Dense(4096,activation='relu'))
model.add(Dropout(0.5)) model.add(Den
se(nb_classes)) model.add(Activation('so
tmax')) model.summary()

sgd = SGD(lr=0.001, decay = 1e-7, momentum=0.9, nesterov=True)
model.compile(loss='categorical_crossentropy',optimizer=sgd, me
trics=['accuracy'])

early_stopping = EarlyStopping(monitor="val_loss", min_delta=0, pati
ence=10, verbose=0, mode="auto")

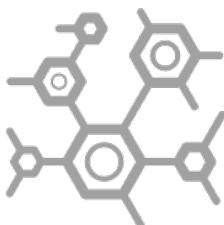
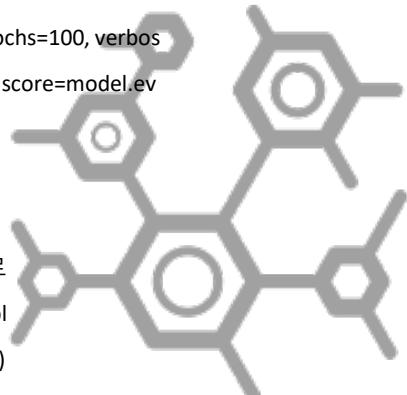
history = model.fit(x_train, t_train, batch_size=32, epochs=100, verbos
e=1, validation_split=0.2, callbacks=[early_stopping]) score=model.ev
aluate(x_test,t_test, verbose=1)

print('loss=',score[0]) prin
t('accuracy=',score[1])

animalgo10_params = "./model_1Cha.h5py" #저장경로
model.save_weights(animalgo10_params) #저장 plt.pl
ot(history.history['loss']) plt.plot(history.history['acc'])
plt.title('1Cha') plt
.xlabel('Acc') plt
abel('Epochs')

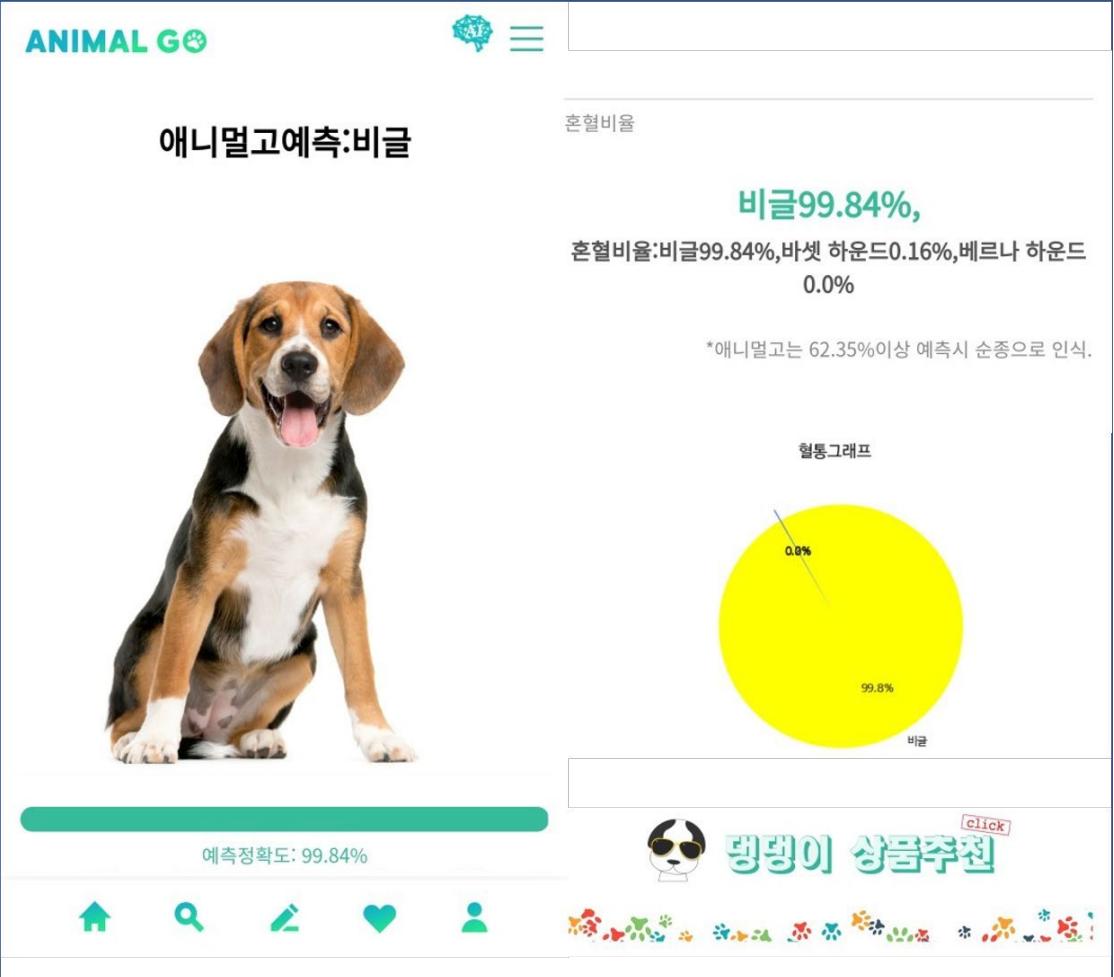
plt.legend(['loss', 'acc'], loc='upper left')
plt.show()

```



## 7. Technical Code Technology

### Recognition Result



The screenshot displays the ANIMAL GO app's recognition interface. At the top left is the logo and name "ANIMAL GO". To the right are icons for AI, menu, and account. Below the header, the text "애니멀고예측:비글" identifies the dog breed. A large image of a Beagle puppy is centered. To the right, the text "혼혈비울" is listed above the main prediction. The main prediction is "비글 99.84%" in bold green text. Below it, the full prediction list is: 혼혈비울:비글 99.84%, 바셋 하운드 0.16%, 베르나 하운드 0.0%. A note at the bottom states: "\*애니멀고는 62.35%이상 예측시 순종으로 인식." A pie chart titled "혈통그래프" shows 99.8% for Beagle and 0.2% for mixed breeds. At the bottom, a progress bar indicates "예측정확도: 99.84%" and a button labeled "click" with a dog icon says "펭귄이 상품주천". The footer features navigation icons for home, search, camera, heart, and profile, along with a decorative pet-themed border.

애니멀고예측:비글

혼혈비울

비글 99.84%

혼혈비울:비글 99.84%, 바셋 하운드 0.16%, 베르나 하운드 0.0%

\*애니멀고는 62.35%이상 예측시 순종으로 인식.

혈통그래프

99.8%

0.2%

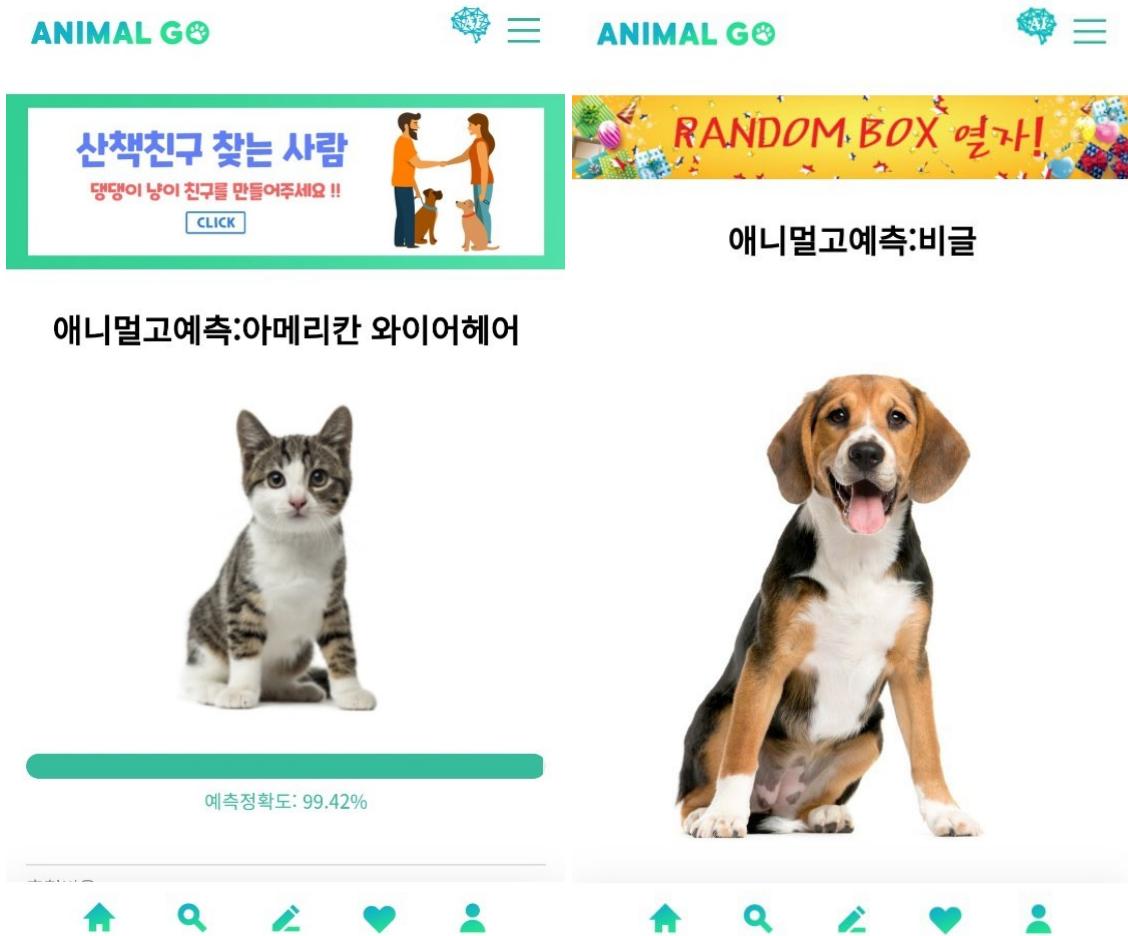
비글

예측정확도: 99.84%

펭귄이 상품주천 click

## 7. Technical Code Technology

Recognition Result



The image shows the ANIMAL GO mobile application interface. At the top, there are two AI icon buttons and the text "ANIMAL GO". Below them are two cards:

- Left Card (Cat Recognition):** A green-bordered card with Korean text "산책친구 찾는 사람" (Pet friend finding person) and "당당이 낭이 친구를 만들어주세요 !!". It features a "CLICK" button and an illustration of a man and woman shaking hands with two dogs. The text "애니멀고예측:아메리칸 와이어헤어" is displayed below the card.
- Right Card (Dog Recognition):** A yellow-bordered card with the text "RANDOM BOX 열자!" (Open the Random Box). The text "애니멀고예측:비글" is displayed below the card.

Below the cards are two large images of animals: a brown and white cat on the left and a tricolor Beagle puppy on the right. Each animal has a teal progress bar underneath it. The progress bar for the cat is nearly full, with the text "예측정확도: 99.42%" displayed. The Beagle's progress bar is also nearly full. At the bottom of the screen are five teal navigation icons: a house, a magnifying glass, a pencil, a heart, and a person.

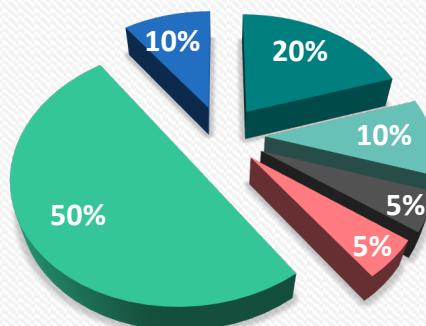
## 8. GOM2 Allocation Allocation

The initial total issue amount was 10 billion GOM (GoMoney), but as GOM2 (GoMoney2) was hard-forked, the total issue amount was decreased to 1 billion.

AnimalGo has carried out 5 rounds of buyback and incineration as of September 2020 for the purpose of enhancing the value of GOM2 Tokens and stabilizing the price. As a result, a total amount of 27,135,607 GOM2 Tokens were incinerated. (Total Issue Amount 972,864,393 GOM2)

- ✓ 20% Sale
- ✓ 10% Project Team
- ✓ 5% Advisor
- ✓ 5% Marketing
- ✓ 50% Ecosystem
- ✓ 10% Reserve

- Reserve amount is for emergency use only.
- The token distribution plan included in the white paper may be changed depending on the progress of the project roadmap, changes in situation regarding technological development, and other changes in circumstances that may affect the issuance and distribution of tokens. When such change is needed, AnimalGo can notify the reasons for the change through the website and emails to participants.
- The remaining sales volume or GOM2 that has been used in the AnimalGo ecosystem and has become attributed to the project team may be incinerated, or be distributed through the exchange or sold to a third party depending on funding situations of the team.
- Hard-fork into GOM2 was completed for GOM holders as of November 2019, and thus the project team will not take any action, such as operation or management, with regard to GOM.
- AnimalGo will continue to carry out buybacks and incinerations with retained earnings.



■ 세일  
■ 마케팅

■ 프로젝트팀  
■ 생태계 구성용

■ 어드바이저  
■ 보관용(리저브)

## 9. Marketing Marketing

In order to revitalize the pet community, users must constantly be attracted and quality posts must be generated. In order to attract users, AnimalGo team is planning to carry out high-efficiency marketing at low cost in the mid- to long-term.

### Promoting Online Community

Low-cost online community and social marketing is used efficiently rather than the more expensive public networks and advertising media. We continue to promote AnimalGo to various pet-related communities online, such as Café, Facebook, Band, and websites, and host app launch events. Events such as upload user pet product gift events can be carried out.

#### GOM2 Open Chat

<https://open.kakao.com/o/gYffZplb>  
<https://open.kakao.com/o/gTTTB6pb>  
[https://t.me/joinchat/H2mFeA\\_y4IU1Q8S4RDI18g](https://t.me/joinchat/H2mFeA_y4IU1Q8S4RDI18g)



#### Influencer Marketing

We promote AnimalGo through influential YouTubers and bloggers and host events.

[https://www.youtube.com/channel/UCtdlfZNzXeO\\_aIX6c--moEw](https://www.youtube.com/channel/UCtdlfZNzXeO_aIX6c--moEw)

#### Industry-Academic Regiment

We promote AnimalGo in connection with pet-related beauty, fitness, shopping, and other industries, as well as pet-related academies, universities, and research institutes. In order to form the app ecosystem, we will continue to invite influential figures as advisors to strengthen cooperation.

#### Participation in Exhibitions

Promote apps and hold membership events at famous exhibitions, fairs, and conferences related to the pet industry.

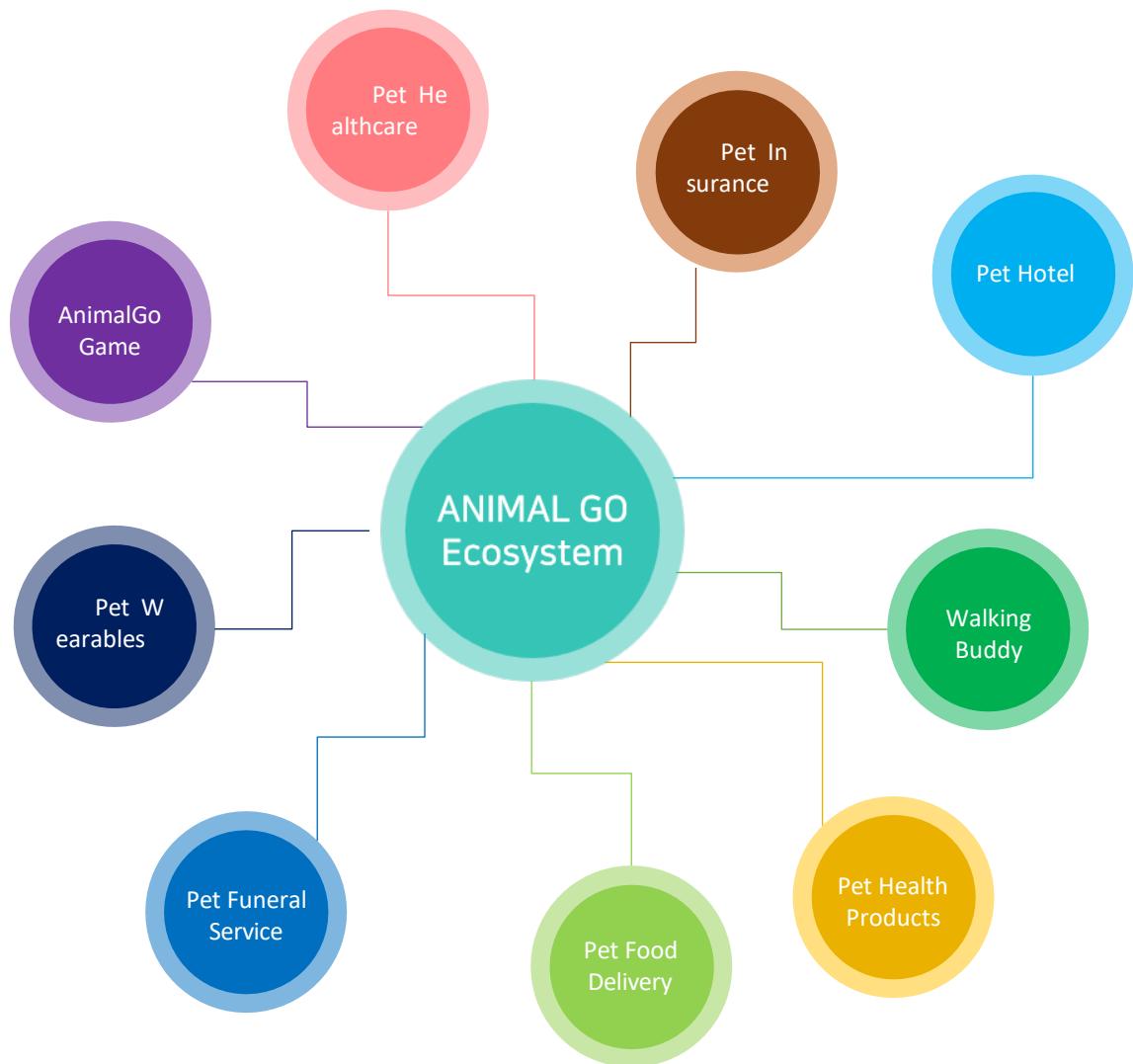
## 9. Marketing Marketing



## 9. Marketing



## 10. Ecosystem Ecosystem



- AnimalGo Hotel – Pet sitting service provided by professional pet caregivers
- Walking Buddy – GOP reward for uploading walking post with nearby AnimalGo users
- AnimalGo Game – Earn ecosystem-usable points for playing games
- Pet Healthcare – Check the pet's conditions and find nearby veterinary clinics
- Pet Funeral Service – Find outstanding service providers for pet funerals
- Pet Food delivery – Pet food, snacks, and products shopping and delivery (AnimalGo Market)
- Pet Wearables – Utilize pet necklace (IoT) for GOP compensation for pet exercise amount
- Pet Health Products – Recommendation for health products after pet health analysis with AI
- Pet Insurance – Connection to pet related insurance planners

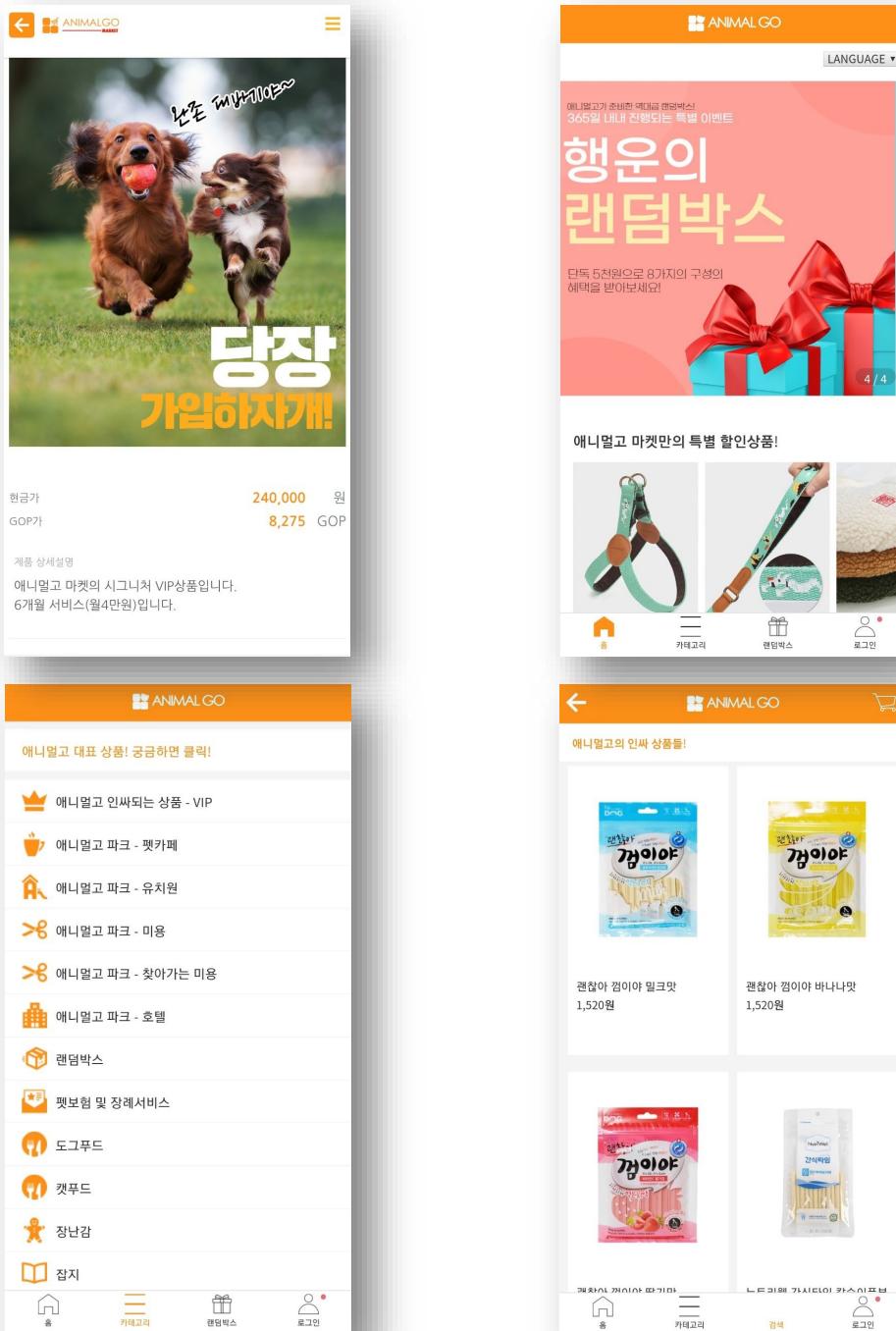
※All services within the AnimalGo ecosystem can be paid with GOP (GoPoint)



## 10. Ecosystem

## 1. AnimalGo Market – Pet Products Shopping Mall

App users can use their GOP for payment on the pet products shopping mall AnimalGo Market.



※All services within the AnimalGo ecosystem can be paid with GOP (GoPoint)

### 13.로드맵(2017~2021 2Q) Milestone

2017

The first half of year

Project initiation

2018

The first half of year

Collect Pet Image Data  
Analysis Data  
Collect Pet Health Data  
Develop Deep Learning, AI Technology

2019

The first half of year

AnimalGo Mobile App MVP Service Development  
AnimalGo SNS open  
AnimalGo App MVP service launching  
Corporate establishment  
Korea exchange Bitsonic listing  
Service stabilization  
YouTube channel creation

2020

The first half of year

Registering GOM2 on Samsung Wallet  
AnimalGo App Global Marketing  
Additional AI-based Technology  
Ecosystem Global Expansion Listing on Large-cap Domestic Exchange

2021

The first half of year

Open AnimalGo Pet Gallery  
Open AnimalGo Park additional Branch  
Companion Animal travel package connected with travel agency  
Launching AnimalGo Walking app Launching

Major Schedule Temporarily postponed

The following is the list that has been postponed due to the Corona 19 issue. We will proceed as soon as it stabilizes.

- Ecosystem Global Expansion
- Open AnimalGo Pet Gallery
- Open AnimalGo Park additional Branch
- Companion Animal travel package connected with travel agency Launching

2017

The second half

Establishing Project Master Plan  
Issuing AnimalGo Business Plan

2018

The second half

Building Blockchain Server DB

2019

The second half

AnimalGo Official Service Launching  
Listing on Foreign Exchange Coinbene  
More Listing on Domestic/Foreign Exchanges  
Marketing Activities, Subscriber Retention  
AnimalGo Ecosystem Expansion  
AnimalGo Market, Park, Beauty, Game launching  
Listing on Japanese Exchange Liquid

2020

The second half

De-fi Service Launching, MoneySwap Launching  
Additional Listing on Large Exchange  
AnimalGo Private-Label Product Launching  
Hotel Package Product Launching

### 13.로드맵(2021 3Q~)

Milestone

2021

The 3rd Quarter of year

Xangle Credit Assessment Report Inquiry

Recruitment of 2nd AnimalGo Supporters

3D modeling of companion animals in Metaverse

2022

The 1st Quarter of year

App service stabilization

Launching AnimalGo Characters NFT

Composing 1st Metaverse architecture and developing UI/UX

2022

The 3rd Quarter of year

Collecting companion animal's behavioral analysis databases

Composing 2nd Metaverse architecture and developing UI/UX

Virtual Asset Wallet Interlink Development in Metaverse

2021

The 4th Quarter of year

Attracting investment of AnimalGo institution Equity

Launching AnimalGo 2.0('AnimalGo walking' App)

Recruitment of 3rd AnimalGo Supporters

Launching AnimalGo Dobong Branch, Nonhyun Branch

2022

The 2nd Quarter of year

AnimalGo Private-Label Product Launching/expanding

Adding other virtual asset payment method

Recruitment 1<sup>st</sup> Metaverse CBT

2022

The 4th Quarter of year

AnimalGo 1<sup>st</sup> Metaverse CBT

Applying Metaverse market system and NFT technic

-The project team faithfully implemented most of the road maps presented in AnimalGo X GoMoney White Paper 1.0 released in June 2019.

-This roadmap does not guarantee the implementation of the project team or be responsible for the future of the project. It can be changed at any time depending on the progress of the project, and there is no notice

- This roadmap cannot be used as an investment judgment element.

## 12. Finance

### Finance

Since the beta launch in July 2019, the AnimalGo project has established an ecosystem of 100,000 accumulated downloads and 40,000 community users as of September 2020. As a result, we have developed and carried out business with sales funds, and now sales of offline services AnimalGo Park and AnimalGo Beauty are on the rise, online sales such as AnimalGo Market are also on the rise, and sales of AnimalGo games are showing great potential. The AnimalGo project is not only a good example of the increase in the value of tokens, but also a good example of steady business sales.



## AnimalGo Hotel



### 13. Source Origin

- Status and Custody of Pet Related Industries (KB Financial Holding Institute, 2018. 12)
- Study on the Development of Pet Industries (Korea Rural Economic Institute, 2018. 3)
- 2018 Research Report on the Status of Pet Ownership and Perception (Korea Pet Feed Association)
- 6 trillion won market for pets in the one-person household era (Maeil Economy, 2018. 3)
- Ethereum White Paper (<https://github.com/ethereum/wiki>)
- Core Ethereum Programming (Jae-hyun Park)
- Building Blockchain Projects (Narayan Prusty)
- Introducing Ethereum and Solidity (Chris Dannen)
- [ethereum.org token page](https://www.ethereum.org/token) (<https://www.ethereum.org/token>)
- The Perceptron: A Probabilistic Model for Information Storage and Organization in the Brain (F.Rosenblatt)
- Very Deep Convolutional Networks for Large-Scale Image Recognition (K. Simonyan, A. Zisserman)
- Backpropagation through Time: What it does and how to do it (P.J. Werbos)
- WAVENET: A Generative Model For Raw Audio (Aaron van den Oord, Sander Dieleman)
- Deep Residual Learning for Image Recognition (Kaiming He, Xiangyu Zhang)
- MobileNetV2: Inverted Residuals and Linear Bottlenecks (Mark Sandler, Andrew Howard)
- Xception: Deep Learning with Depthwise Separable Convolutions(Francis Chollet)
- Going Deeper with Convolutions (Christian Szegedy, Wei Liu)
- Tensorflow Machine Learning Cookbook (Nick McClure, Akon)
- <https://getbootstrap.com/>
- <https://keras.io/>
- <https://www.tensorflow.org/>
- [www.tractica.com](http://www.tractica.com)
- [www.businessinsider.com](http://www.businessinsider.com)

## 15. Disclaimer

### Disclaimer

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