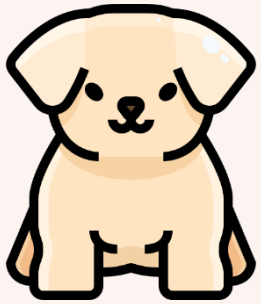
AnimoGram

Graduation Project 1



201835406 구건호
201835532 조윤상
201935027 김재희
201935094 이라연

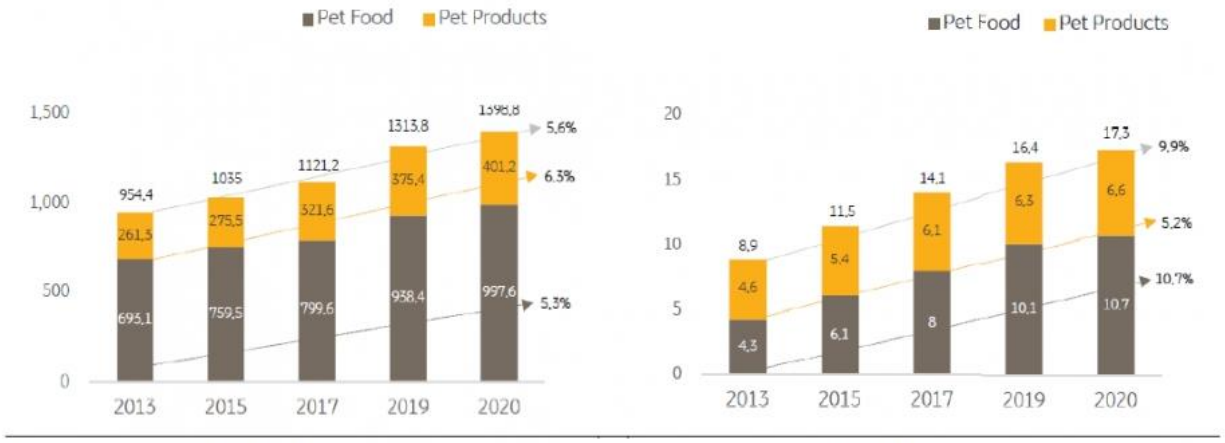
Contents

01 Related Market Research

Pet-Tech Market

[그림 4] 세계 펫케어 시장 규모 추이

(단위: 억 달러)



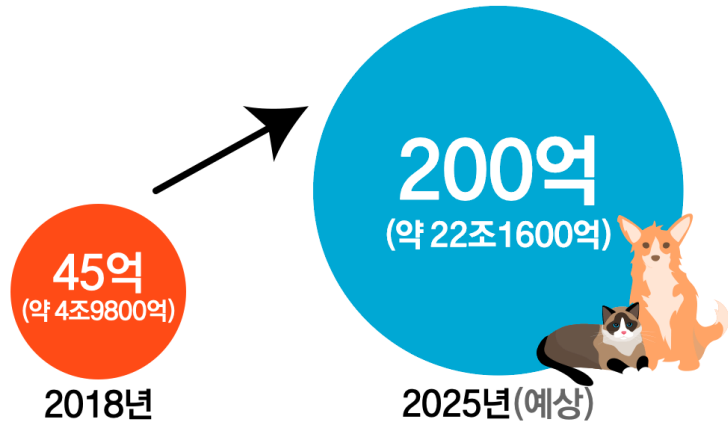
[그림 5] 한국 펫케어 시장 규모 추이

(단위: 억 달러)

자료: "Pet care in the US," Euromonitor International, May 2020. 2020년은 예상치

세계 펫테크 시장 규모

단위: 달러(원), 연평균 성장률(CAGR) 예측치: 24%



자료: 글로벌마켓인사이츠

The JoongAng

- The number of people raising pets is on the rise due to the increase in single-person households, aging, and changes in the social environment caused by COVID-19.
- At the same time, the pet tech industry has emerged that meets consumers' desire to care for pets through the combination of advanced ICT technology.

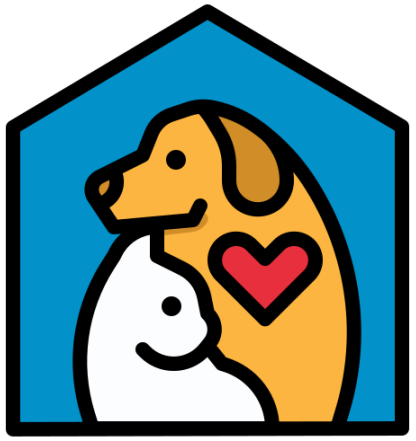
02 Motivation

Want to make more fun and vivid memories with my pet

Want to create a platform where I can easily share various aspects of my pet with various people

03 Application Description

Ani mo Gram

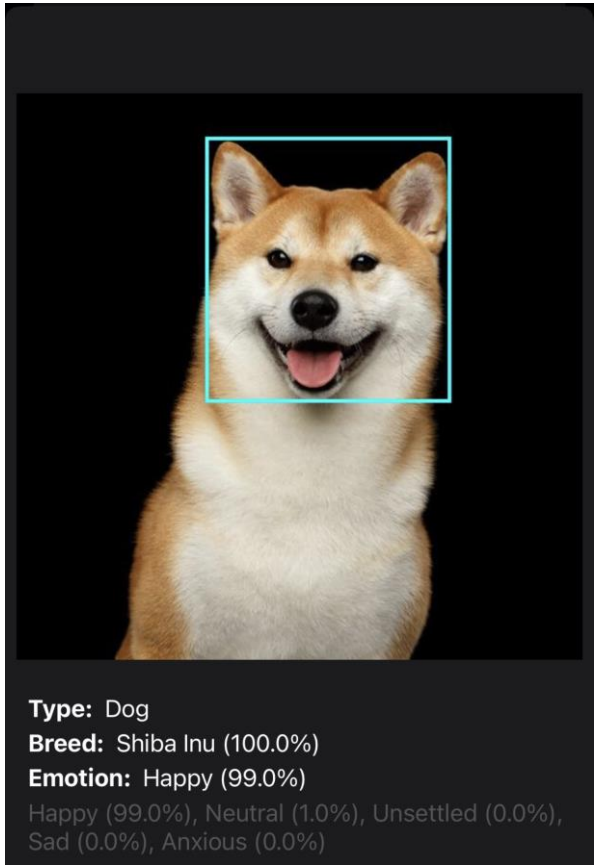


Animal

Emotion

Instagram

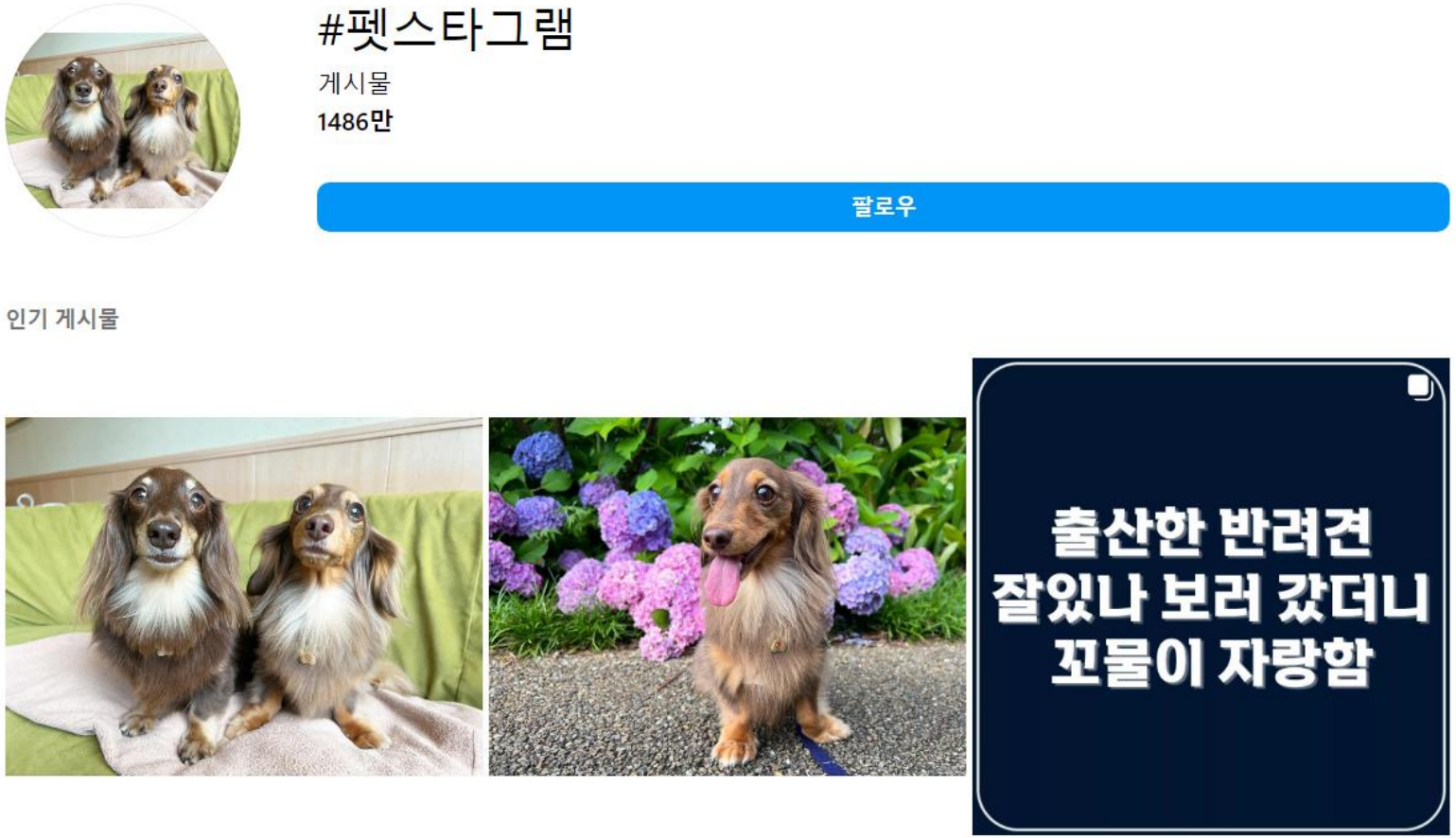
03 Application Description



Recognition of a pet's facial expression and breed

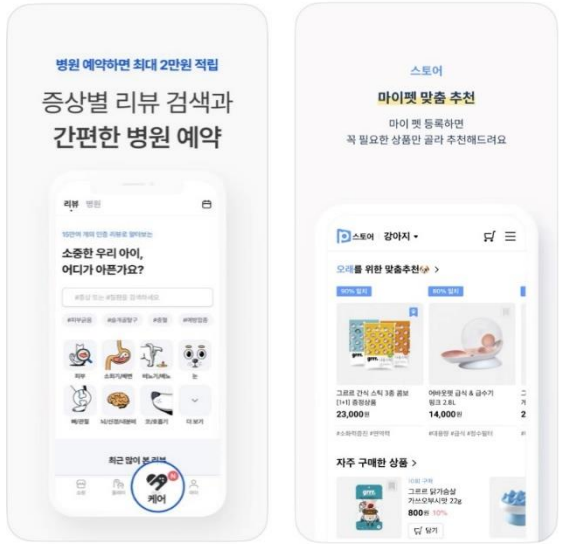
Provide filters that fit the emotions

03 Application Introduction



SNS sharing edited photos

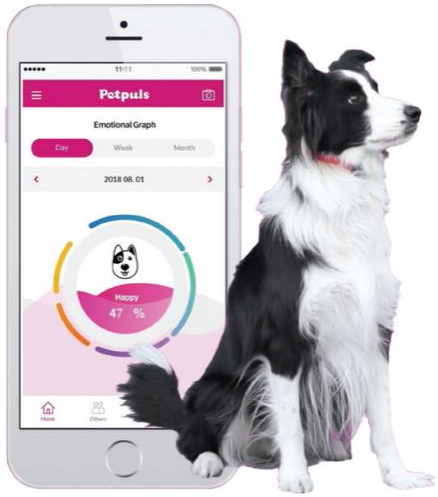
04 Differentiation from other apps



Pet Care & Pet E-Commerce

These are insufficient functions in emotional exchange with pets.

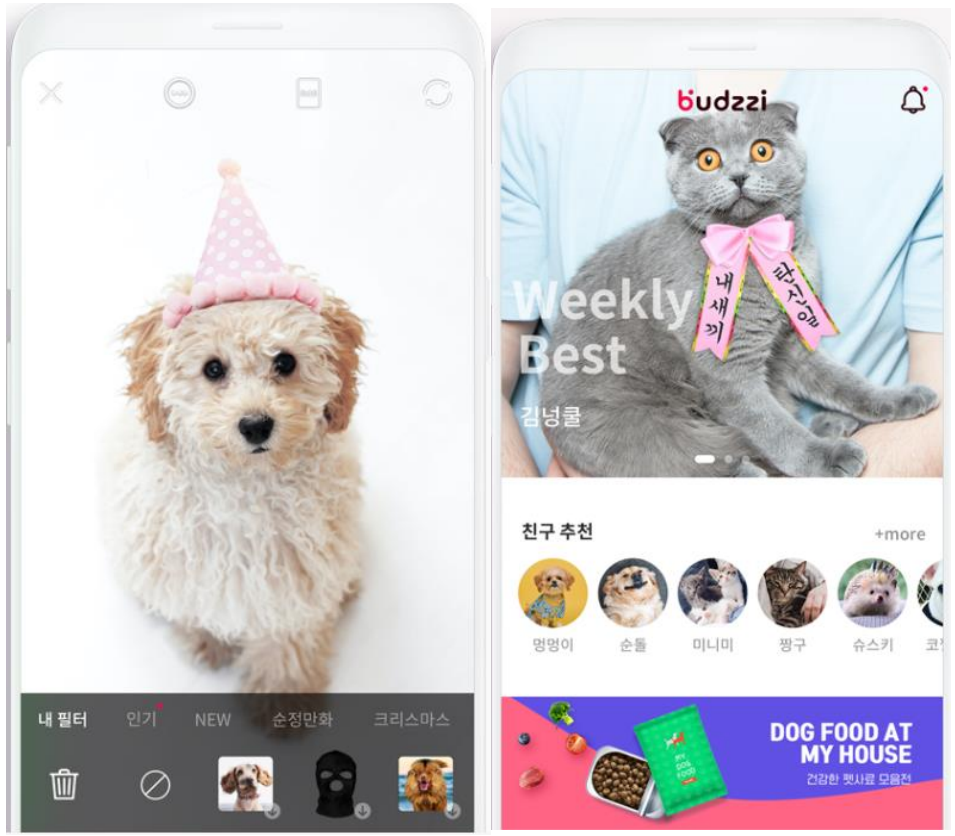
04 Differentiation from other apps



A device that interprets emotions by analyzing the voices of pets

These need additional hardware

04 Differentiation from other apps

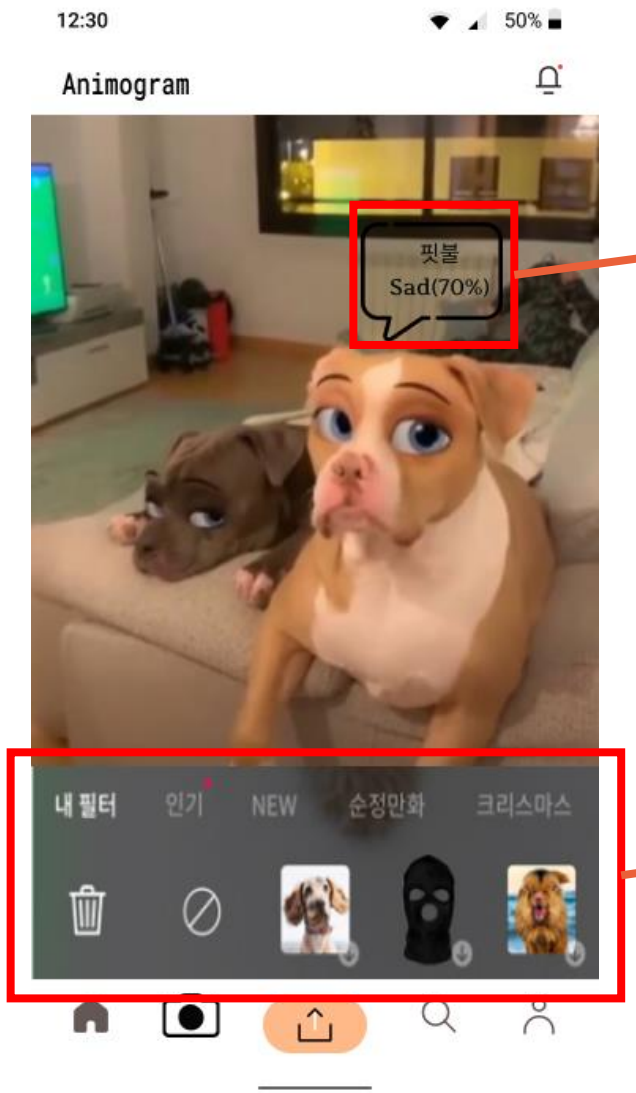


Camera Filter APP & PET SNS APP

There's no functions about emotion recognition, no species separation

05 Application UI Design

Camera

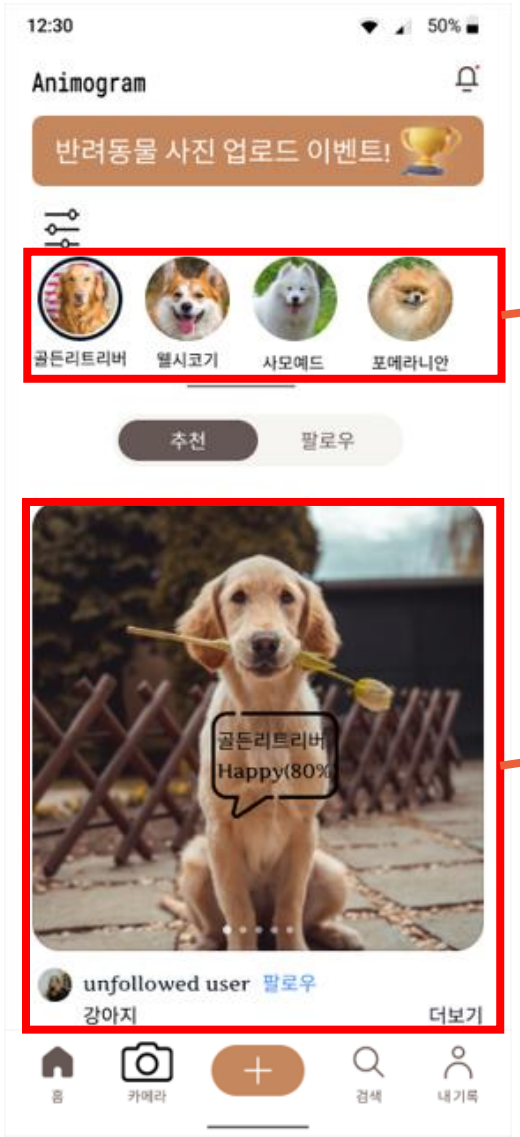


Display the breed and emotion

Reserve the related filter

05 Application UI Design

Main

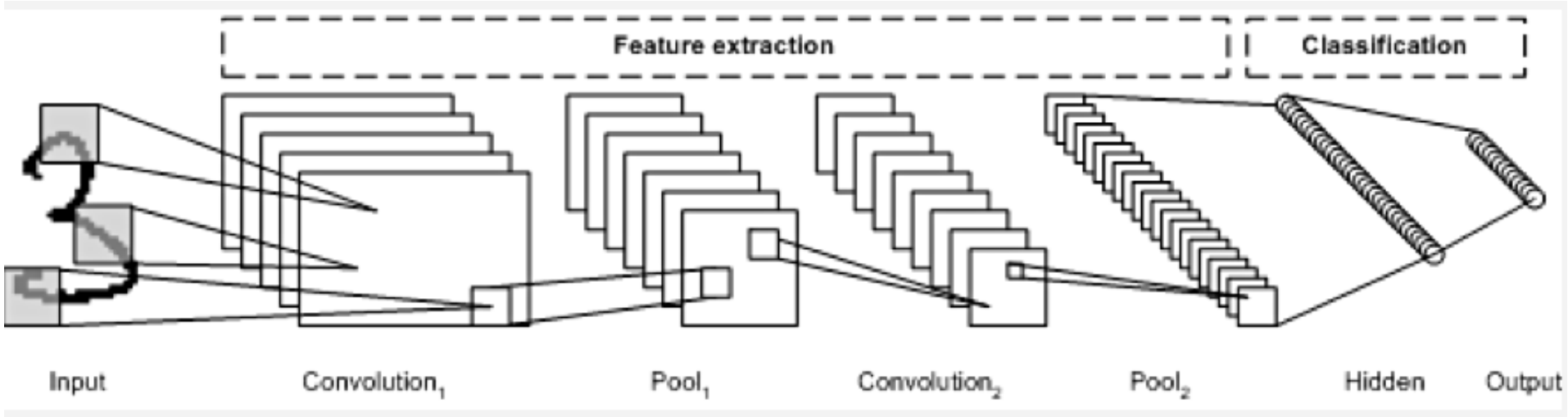


Select the breed what you want

Display the post

06 Technology Used

1. Classify emotions and breeds by image:



CNN Model

06 Technology Used

2. Applying stickers to images

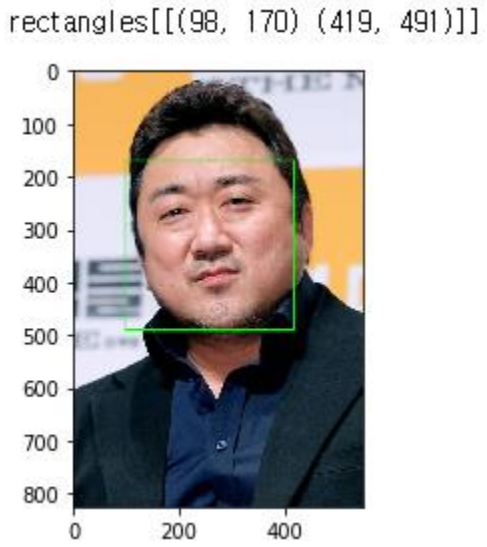
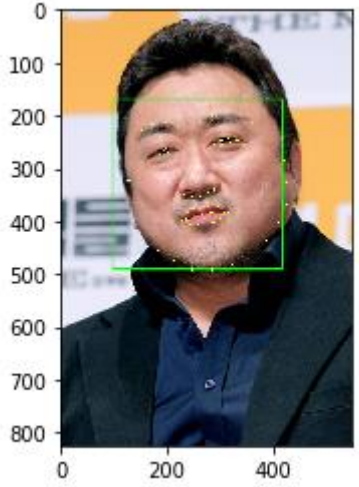
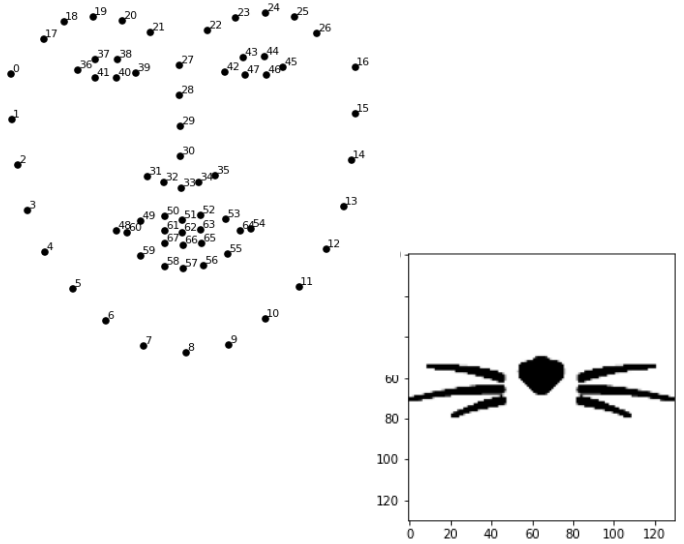


Image Import & Face Detection



Landmark import and output

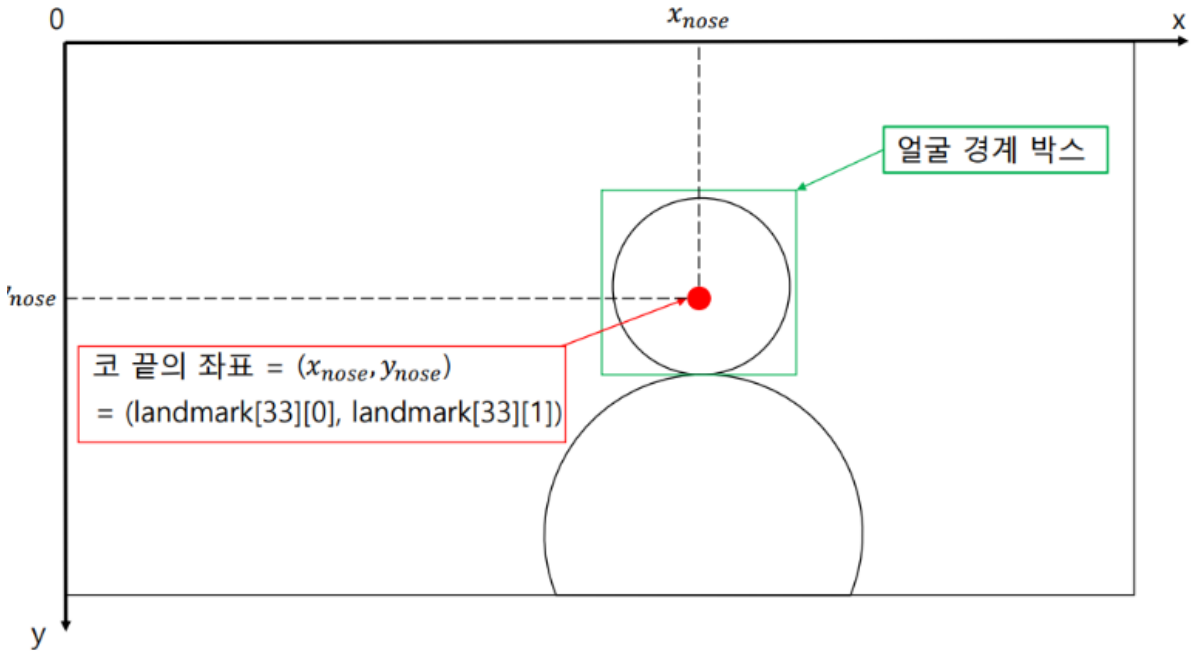


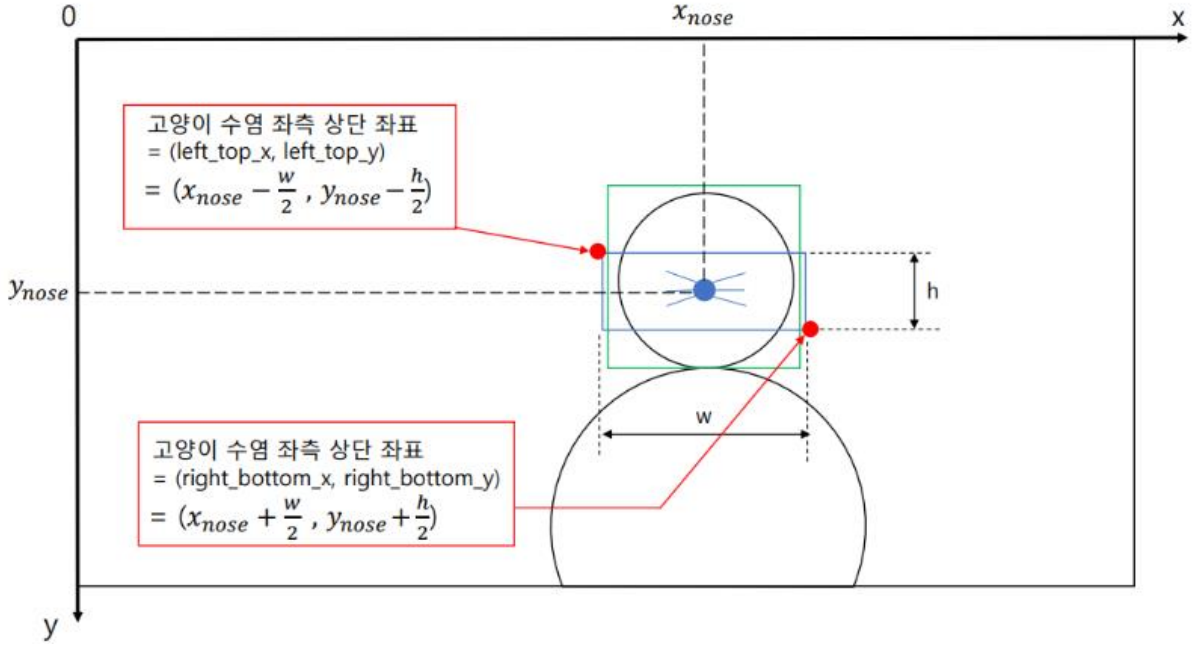
Identifying the position of the nose, adjusting the size of the sticker

06 Technology Used

2. Applying stickers to images

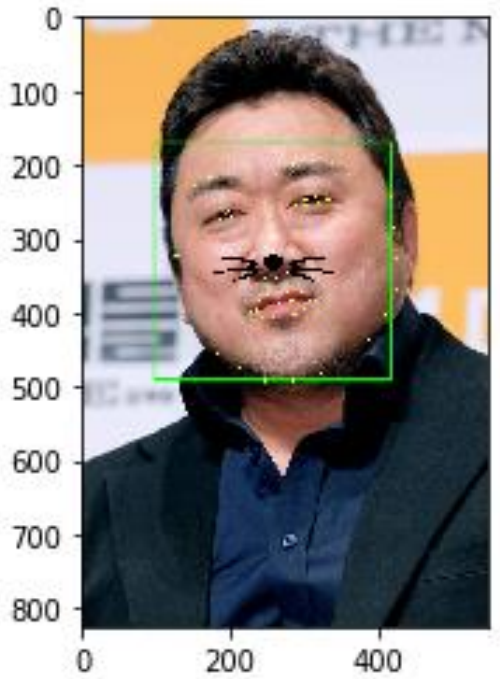
Set sticker image area coordinates





06 Technology Used

2. Applying stickers to images



Apply Filter

Remove bounding box and landmark

07 Development Tools & Framework

Frontend

Flutter

- **Flutter Framework:**
  Develop a cross-platform mobile app that operates on both Android and iOS using the Flutter framework.

- **Camera Access and Image Processing:**
  Utilize Flutter's camera package to enable users to capture photos of their pets.

07 Development Tools & Framework

Facial expression & Breed detection and analysis

Dlib + OpenCV

- **OpenCV and Dlib Libraries:**

  These libraries are used to detect and analyze a dog's facial expressions and breeds. They involve tasks such as face detection, facial feature extraction, and emotion & breed classification models. The image processing library of OpenCV is used to implement filters corresponding to different emotions & breeds and apply them to the photos.

TensorFlow

- **TensorFlow library:**

  Collect a labeled dataset for dog facial expressions and train a model for emotion analysis.

07 Development Tools & Framework

Backend

Node js

- **Node.js:**
  Server setup, communication between the client app and server, database integration.

Mongo DB

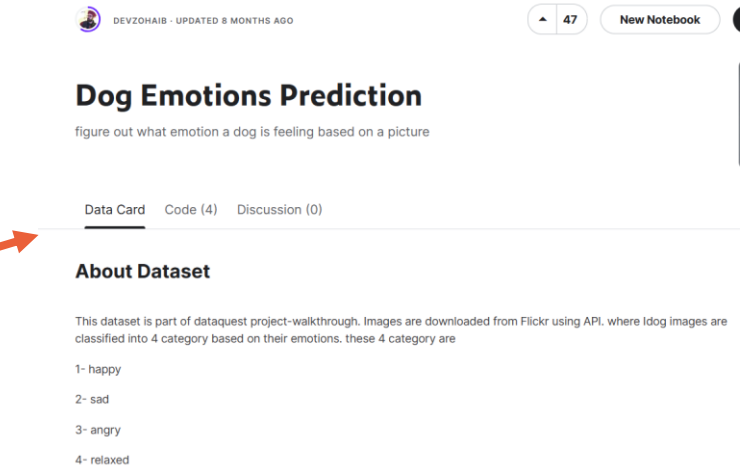
- **Mongo DB:**
  Storage and management of user information, posts, comments, and photos.

07 Development Tools & Framework

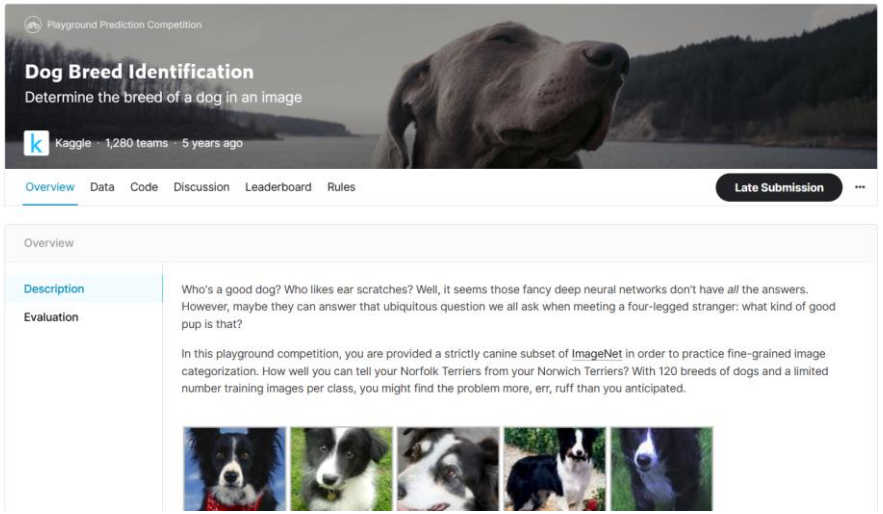
Data set

kaggle

kaggle



Facial Expression



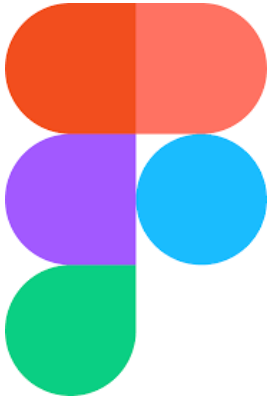
Breed

07 Development Tools & Framework

Others

Github

Collaboration, Version Management



Figma

App Design

Photoshop

Graphic Design about filter

08 Implementation plan & Role Sharing

Implementation Plan

3-1
Idea Selection
- Related market research
- Related technology research

3-2
Implementation
- Classification model
- Application
- Filter

4-1
Documentation

3-Summer
Studying Required Skills
- CNN Model
- Used Tools & Frameworks

3-Winter
Test & Evolution
- Test system works well
- Add the additional pets

08 Implementation plan & Role Sharing

Role Sharing

구건호

Train the CNN model
&
Image Processing

조윤상

Develop
Camera Function

김재희

Develop
SNS Function

이라연

Design the
Camera Filter

Reference

https://www.hani.co.kr/arti/economy/economy_general/1077433.html

https://bkshin.tistory.com/entry/%EC%BB%B4%ED%93%A8%ED%84%B0-%EB%B9%84%EC%A0%84-5-%EC%96%BC%EA%B5%B4-%EC%9D%B4%EB%AF%B8%EC%A7%80%EC%97%90%EC%84%9C-%EA%B0%90%EC%A0%95-%EB%B6%84%EB%A5%98Emotion-Classification

https://gruuuuu.github.io/machine-learning/cnn-doc/

https://shinest-programming.tistory.com/53

https://velog.io/@shoulmon/SSACAIFFEL-20210112-%EC%B9%B4%EB%A9%94%EB%9D%BC-%EC%8A%A4%ED%8B%B0%EC%BB%A4-%EC%95%B1-%EB%A7%8C%EB%93%A4%EA%B8%B0-%EC%B2%AB%EA%B1%B8%EC%9D%8C

Q&A


THANK
YOU!