**기말 최종프로젝트**

**전자상거래**

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분반 : 001

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1. **개발 목표와 내용**

**목표 :** 번거로운 검색과정 없이 원하는 강아지의 사진 하나만으로 강아지에 대한 정보 제공, 해당 품종 또는 유사 품종에 대한 분양 및 돌봄 서비스 제공.

**내용 :** 강아지 품종들에 대해 모델을 학습. 해당 모델을 통해 품종을 찾아 낸 뒤 해당 품종 정보 제공. 입양, 돌봄 서비스 게시판으로 연결.

1. **서론**

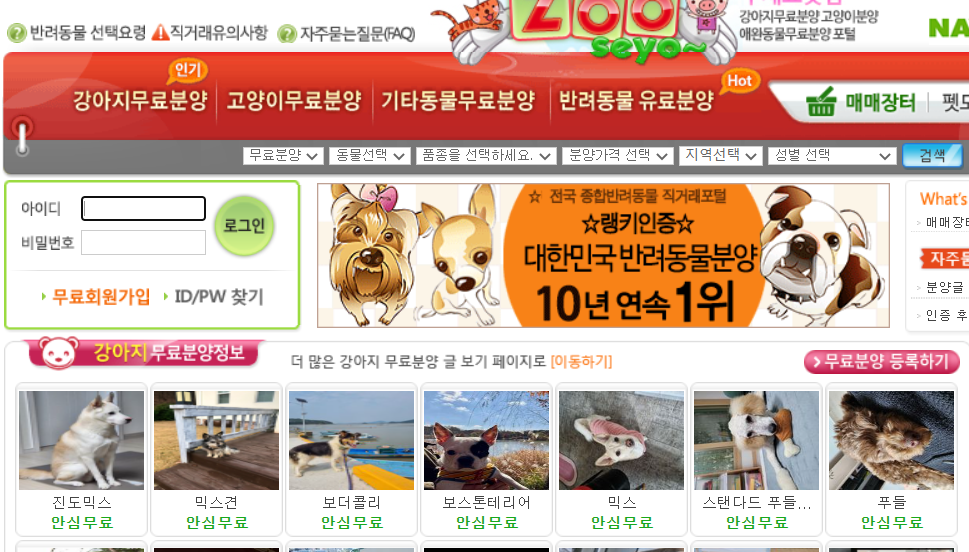
**서비스의 필요성 :** 분양 또는 돌봄 서비스 제공 시 원하는 특성을 가진 강아지 찾기에 대한 불편함 존재. 특히 원하는 특성을 가진 ‘믹스견’에 대한 검색의 불편함이 큼.

**개발 시스템 소개 :**

* 직접 촬영 또는 이미지 한장으로 해당 이미지 내의 강아지의 정확한 품종 또는 유사 품종 정보 제공
* 해당 품종의 강아지의 분양 또는 돌봄 서비스 게시판으로 연결
* 분양서비스 또는 돌봄 서비스 제공자와 채팅 서비스 제공
* 반려동물 자랑 게시판 제공

**관련 시장 현황 :**

<https://www.zooseyo.com/search/search.php> (주세요닷컴)



<https://jpet.jboard.net/petfree/pet.php> (jpet)



* 위와 같이 원하는 품종을 일일이 선택해야 함

**기존 서비스의 차별성 :** 일일이 품종을 고르거나 게시물을 눌러 해당 반려동물을 확인하는 것이 아닌 원하는 품종의 반려동물에 대한 서비스를 즉각적으로 제공.

1. **개발내용과 결과**

**주요 적용 기술 :** 이미지 분류 학습시킨 tensorflow.js 모델[[1]](#footnote-1)[[2]](#footnote-2)[[3]](#footnote-3)

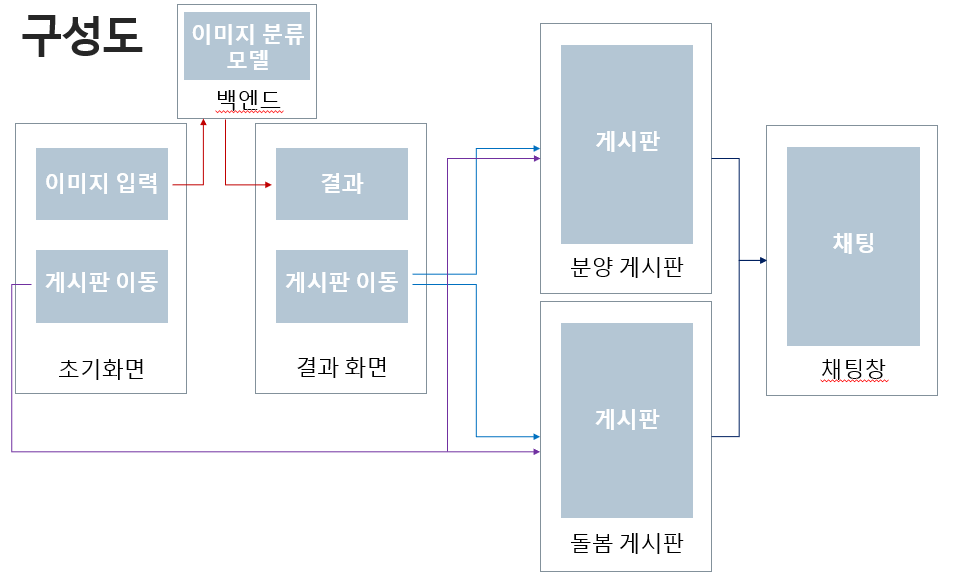
머신 러닝을 이용한 이미지 분류 기술

* 오픈 소스 Tensorflow[[4]](#footnote-4)

: 텐서플로(TensorFlow) 또는 텐서플로우는 다양한 작업 에 대해 데이터 흐름 프로그래밍을 위한 오픈소스 소프트 웨어 라이브러리이다. 심볼릭 수학 라이브러리이자, 인공 신경망같은 기계 학습 응용프로그램 및 딥러닝(deep Learning)에도 사용된다.

* tensorflow.js를 이용한 인공지능 모델 구현

**개발 시스템의 구성도 :**

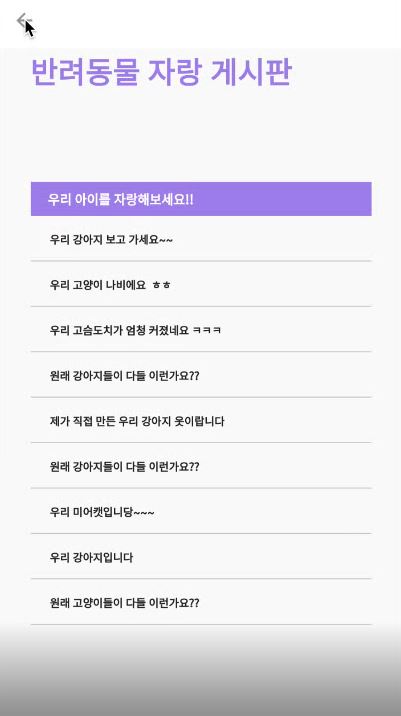


**각 구성 세부 내용 및 개발 결과 :**

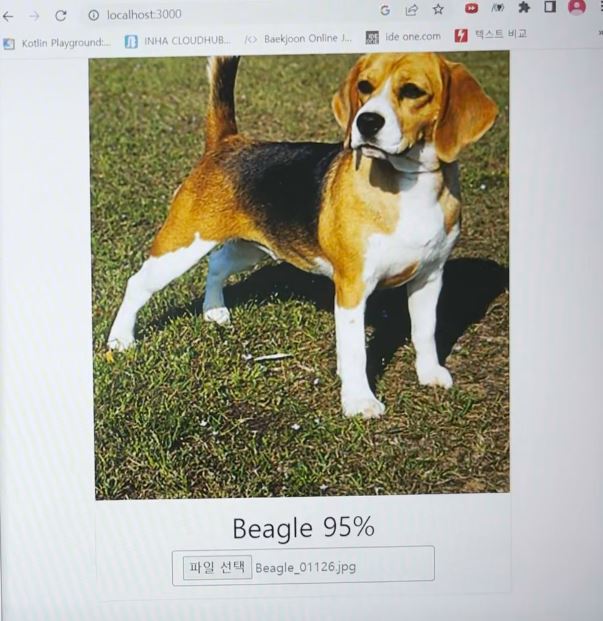
어플리케이션 내 페이지

![텍스트, 전자기기, 스크린샷이(가) 표시된 사진

자동 생성된 설명](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RDcRXhpZgAATU0AKgAAAAgABAE7AAIAAAAKAAAISodpAAQAAAABAAAIVJydAAEAAAAIAAAQzOocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAOq5gOusuOywrAAABZADAAIAAAAUAAAQopAEAAIAAAAUAAAQtpKRAAIAAAADNDcAAJKSAAIAAAADNDcAAOocAAcAAAgMAAAIlgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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wCfz/yEn+FH/CU6x/z+f+Qk/wAKAPR99G+vOP8AhKdY/wCfz/yEn+FH/CU6x/z+f+Qk/wAKAPR99G+vOP8AhKdY/wCfz/yEn+FH/CU6x/z+f+Qk/wAKAPR99Fecf8JTrH/P5/5CT/CigD//2Q==)



백엔드 내 이미지 분류 모델



**기술개발결과 활용 계획 :**

* 강아지 뿐만 아니라 다양한 반려동물에 대한 dataset을 모델에 추가 학습하여 다양한 반려동물에 대한 서비스 추가
* 위 기술을 기반으로 반려 동물 커뮤니티 형성, 해당 커뮤니티를 대상으로 한 애완 용품 판매, 광고 등의 사업 확장

1. **개발 스케줄**

11/6 ~ 11/9 : 어플 내 구현 기능 토론 및 확정

11/11 ~ 11/16 : 이미지 분류 모델 학습

11/18 ~ 11/20 : 프론트 개발

11/19 ~ 11/21 : 백엔드 개발

11/22 ~ 11/23 : 최종 개발 마무리 및 발표자료 준비

1. **각 팀원 역할**

김상준 : 프론트 100

전민제 : 이미지 분류 모델 50, 백엔드 100

김문찬 : 이미지 분류 모델 50, 발표자료 보고서 발표 100

**전체 : 각 33.3 / 33.3 / 33.3**

1. **개발 결과 시연**

: 영상 첨부

1. **프로젝트 후기**

**:** 학교 이론 수업과 실습 수업을 통해 지식을 쌓아가며 어느정도 실무 능력에 대해 자신감을 갖고 있었으나, 이번 프로젝트를 진행하며 실제 실무 능력의 부족과 중요성을 다시 한번 느낄 수 있는 계기가 되었다. 또한 조원들과 함께 비즈니스 모델을 세우고 서비스를 기획하는 과정에서 팀 프로젝트를 통한 비즈니스 서비스 제공에 대한 흥미를 느낄 수 있었다.

1. tensorflow.org [↑](#footnote-ref-1)
2. https://cdn.jsdelivr.net/npm/@tensorflow/tfjs@1.0.1 [↑](#footnote-ref-2)
3. https://cdn.jsdelivr.net/npm/@tensorflow-models/mobilenet@1.0.0 [↑](#footnote-ref-3)
4. https://ko.wikipedia.org/wiki/%ED%85%90%EC%84%9C%ED%94%8C%EB%A1%9C [↑](#footnote-ref-4)