

Team 2: Analysis of Pet Adoption

By Yi Yu, Kai Ye and Zhenkai Lai

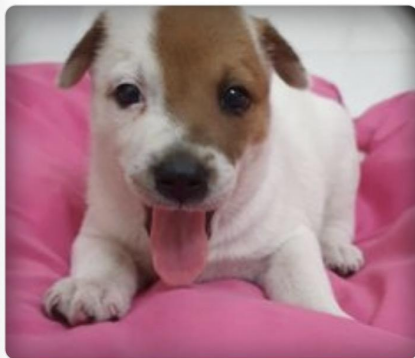
Motivation and Objective

- Nowadays, millions of stray animals are suffering from homelessness
- In Malaysia, there is an animal welfare platform named PetFinder.my, which helps those animals to find a home
- The rates of pet adoption vary according to their online profiles
- The team will analyze the factors that determine the rates of animal adoption and predict the adoption rate

Dataset

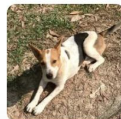
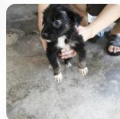
- Adoption speed
- Type
- Name
- Age
- Breed, etc.

There are **8,818** homeless doggies here.
Let's find a home for them now!



HUAHUA GIRL
Female, 2 Mths, Mixed Breed
Selangor, by [JocelynNg](#)

Little HUAHUA looking for a responsible owner. Adopt only if you can commit to a dog for life. Please WhatsApp or call SUAN at 0182021918 to adopt.



There are **7,219** neglected kitties here.
Shall we give them a loving family?



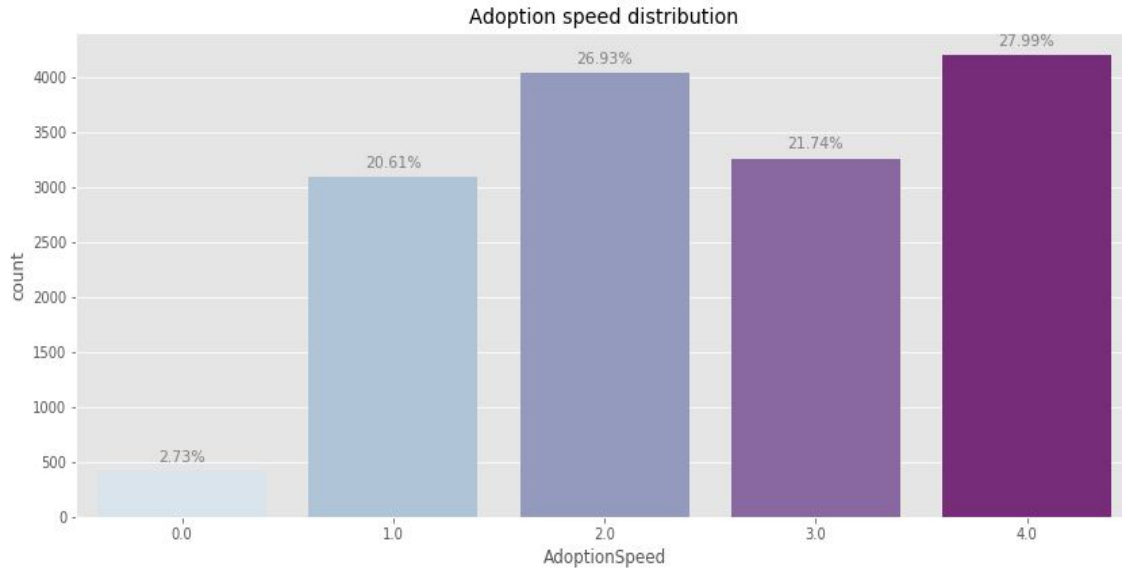
Obi Wan
Male, 5 Mths, Domestic Short Hair
Selangor, by [samcopau](#)

Obi Wan was found in a very bad shape back in Nov 2019. He was severely injured and his front limb was torn & dislocated. He was hospitalised for 2 weeks and we have nursed him back to health. He is vaccinated, dewormed and deflea...



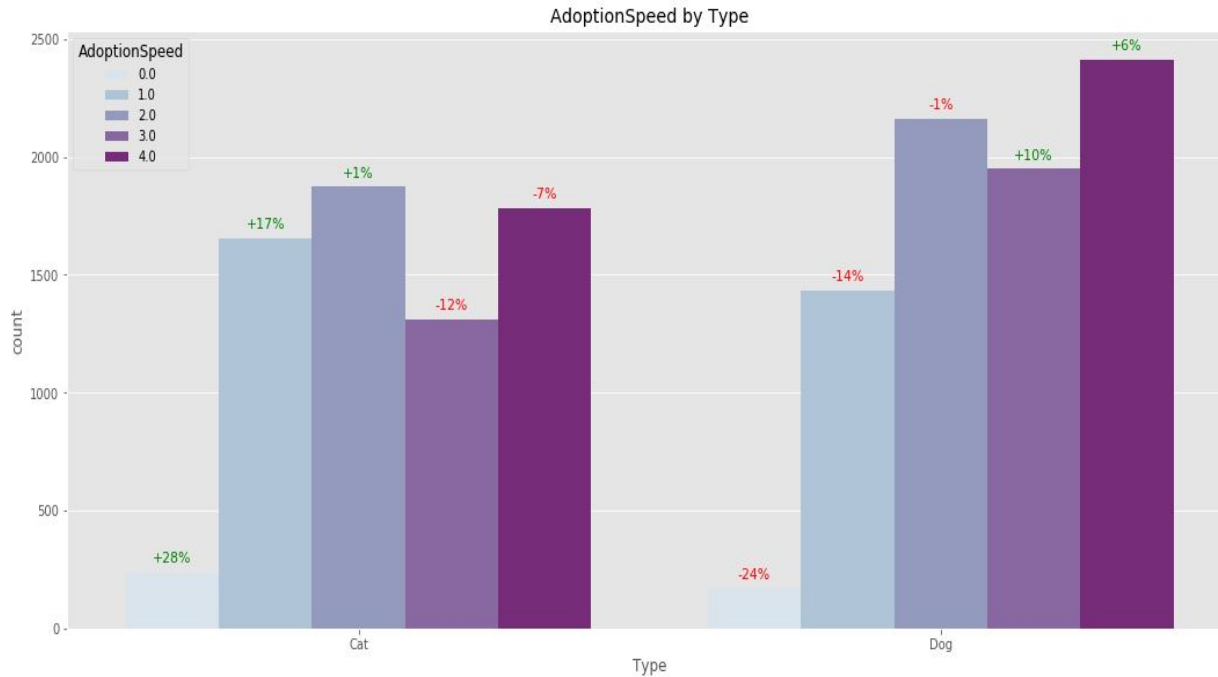
Data Visualization

What's the Adoption speed distribution ?



- 0 - Pet was adopted on the first day
- 1 - Pet was adopted in the first week
- 2 - Pet was adopted in the first month
- 3 - Pet was adopted in the second and third month
- 4 - No adoption after 100 days

Type: Cat vs. Dog



- Cats are more likely to be adopted early than dogs

A brief scan of popular names for pets

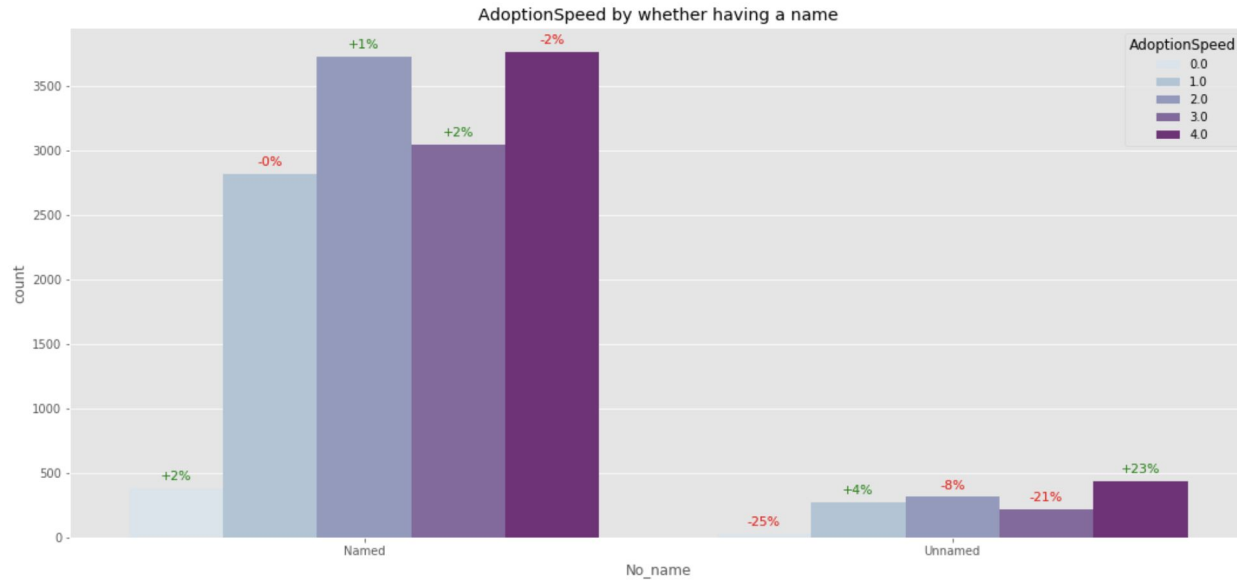
WordCloud of Cat Name



WordCloud of Dog Name

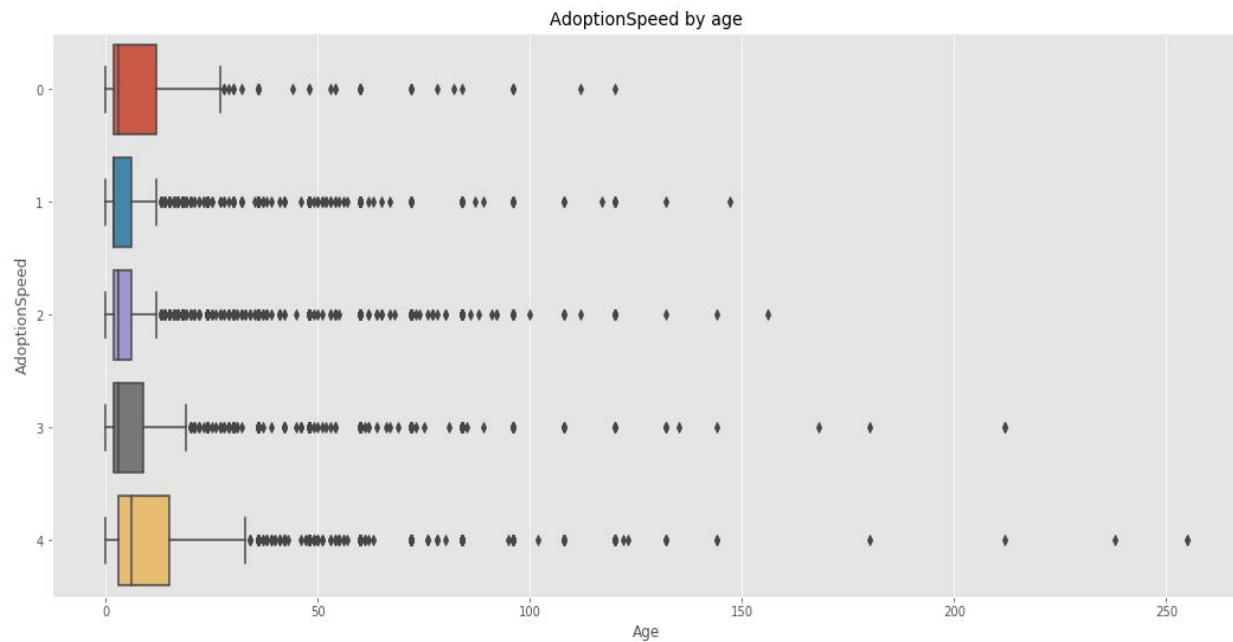


Name: w/ a name vs. w/o a name



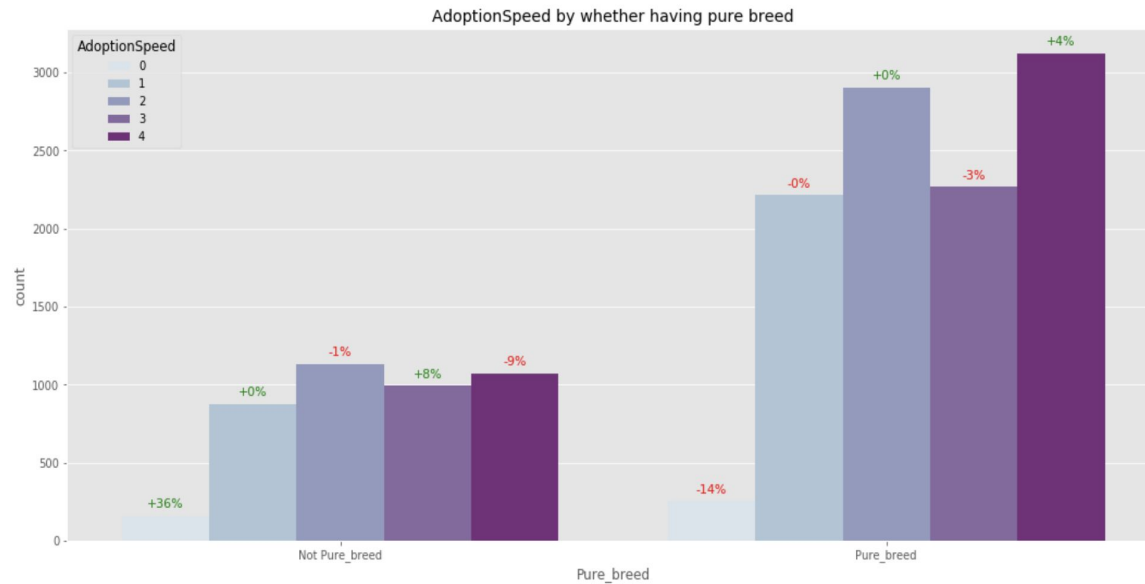
- Pets with names should be more popular

Age (months)



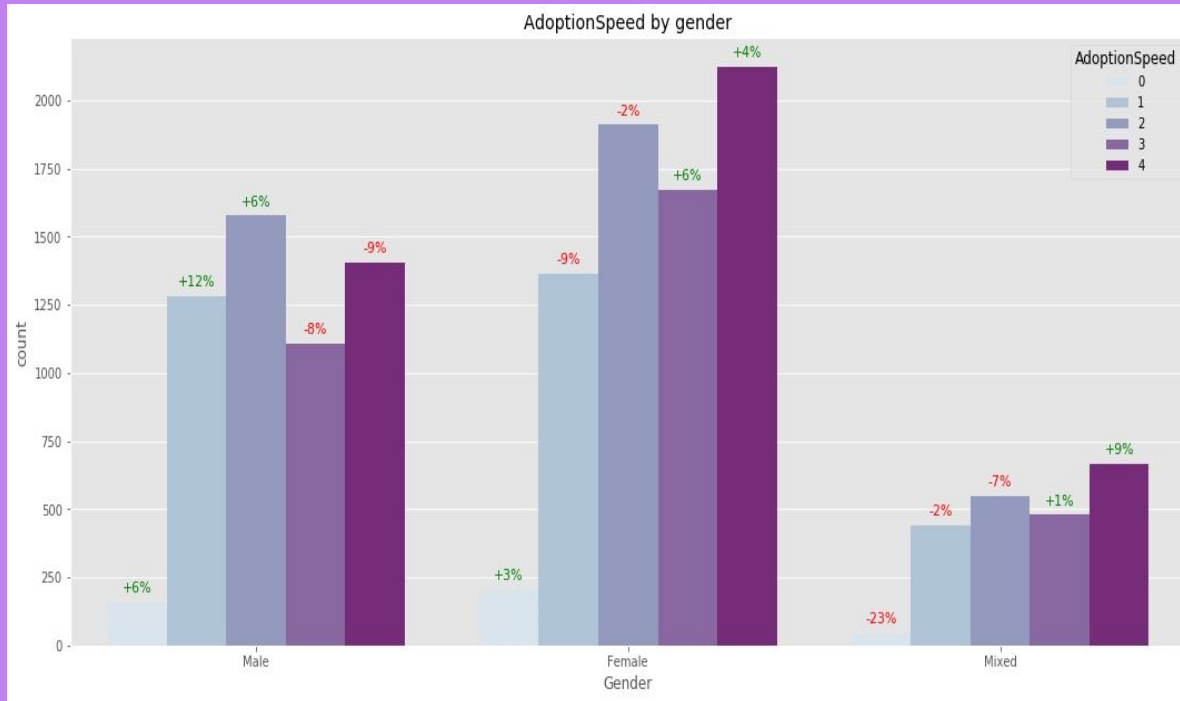
- Young pets are more likely to be adopted early

Breed: Pure_Breed vs. Mixed Breed



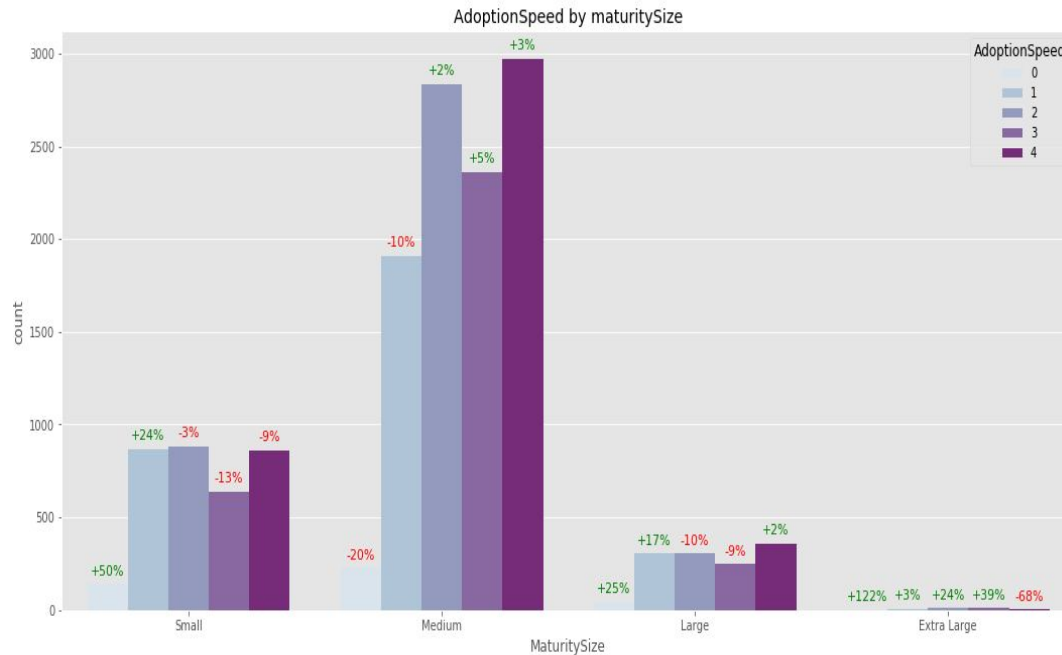
- Mixed breed pets tend to be adopted faster

Gender: Male vs. Female vs. Mixed



- Male pets are adopted faster than the female
- Mixed pets are least popular

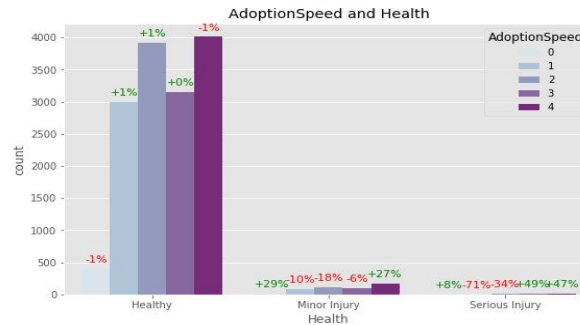
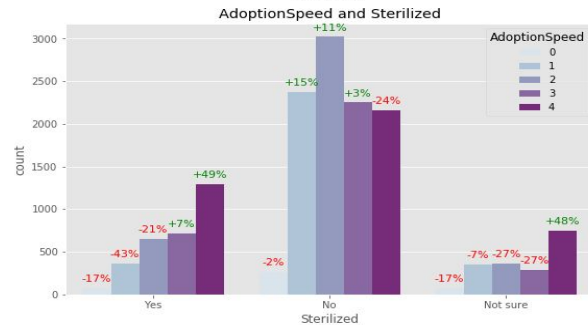
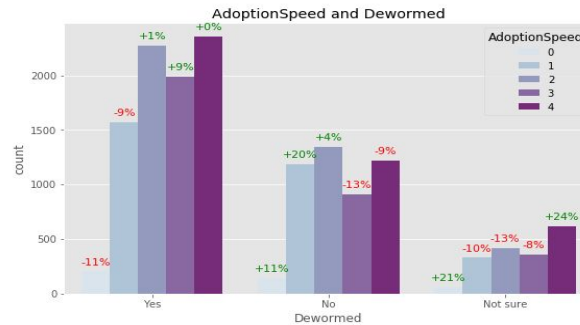
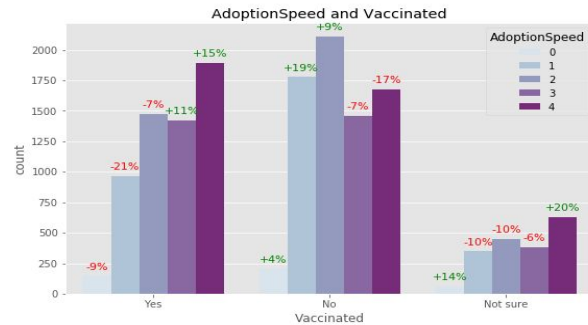
Maturity Size: Small vs. Medium vs. Large vs. Extra Large



- Medium size pets are most common
- However, they are less popular than pets of other sizes

Health

Adoption Speed and health conditions



- Almost all pets are healthy. Number of pets with injury is negligible.
- People prefer non-vaccinated, non-sterilized and non-dewormed pets.

Other features

1. Description

- **'Desc_length'** #The length of the whole description
- **'Desc_words'** #The number of words in the description
- **'Average_word_length'** #Average length of each word in the description

2. FurLength

3. Color

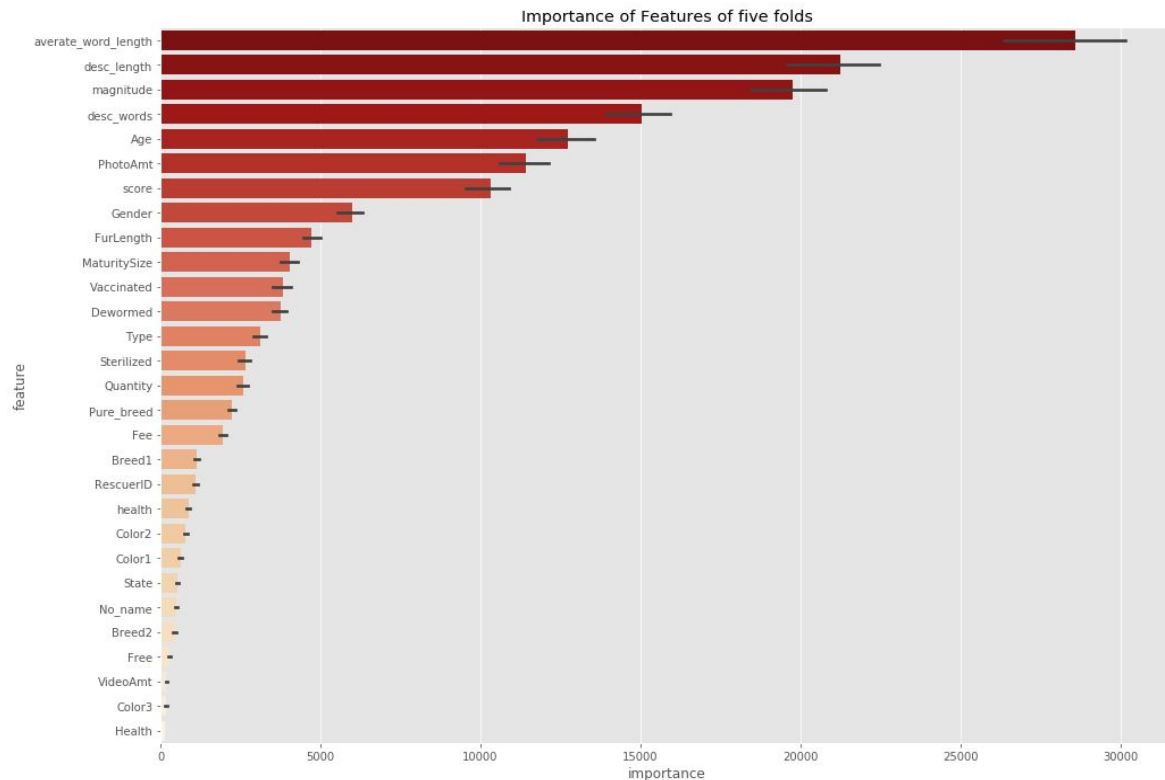
4. Fee, etc.

Adoption Speed Prediction

Prediction Model:

LightGBM

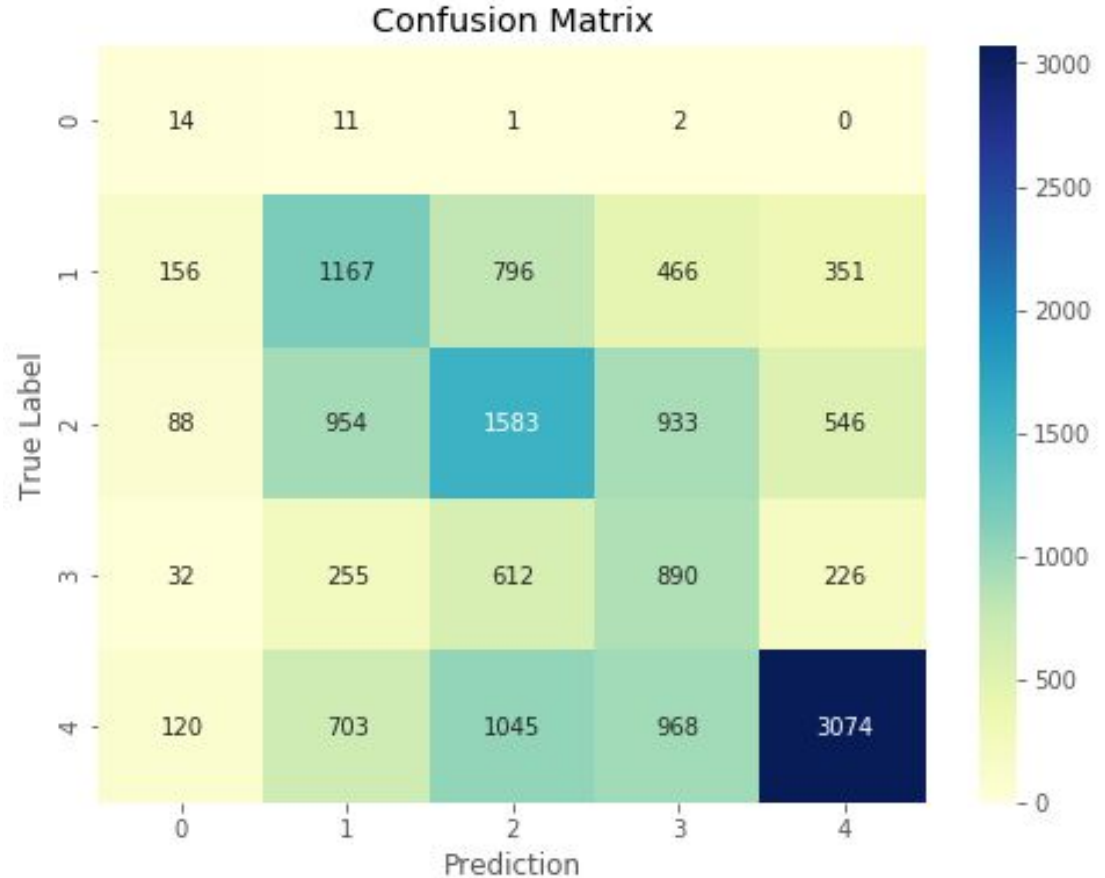
a gradient boosting framework
that uses tree based learning
algorithms



Importance Of Features

Prediction performance

- The x axis are adoption speeds of prediction
- The y axis are true adoption speeds
- The numbers on the diagonal line means that we successfully predict the adoption speed
- The performances of prediction for adoption speed 0 and 3 are not ideal, but the rest of three are good



Conclusion

In this presentation, we analyze how each feature influences the adoption speed. At the end, we find that the description part about pets in their profiles is the most important.

Although we cannot change the physical features of pets, like age and color, we can improve the description in their profiles to help them find a home!

Thank you