

# iWildCam 2019 - FGVC6

Categorize animals in the wild

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開放平台軟體期末專題, 2019

# Outline

- 1 Introduction
- 2 Methodology
- 3 Dataset
- 4 Experimental Evaluation

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# Introduction

## 成員介紹

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- 1043310 施紹唐

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# Introduction

## 專題問題描述

- 我們挑選的主題是Categorize animals in the wild，一個在kaggle上面舉辦的比賽，利用kaggle提供的資料集來訓練出一個模型，讓我們可以藉由這個模型來為輸入影像分類，模型可以區分22種動物，希望可以藉由訓練出模型來監測觀察不同地區生物生態以及遷移情況，讓研究人員可以更輕易的掌握生態變遷。

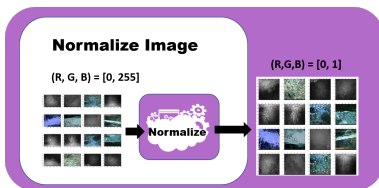
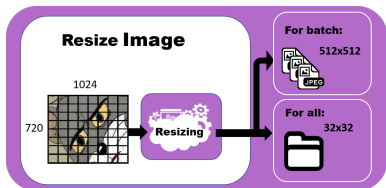
# Outline

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# Methodology

## Input of model

- 一個(32,32,3)圖片





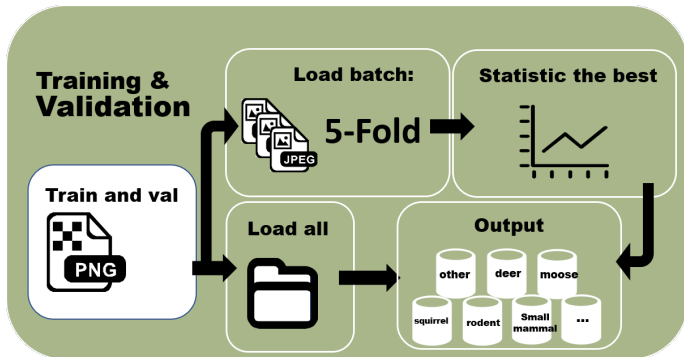
# Outline

- 1 Introduction
- 2 Methodology
- 3 Dataset
- 4 Experimental Evaluation

# Methodology

## Output of model

- 輸出一個權重檔案，model.h5



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1 Introduction

2 Methodology

3 Dataset

4 Experimental Evaluation

- Dense121  
GlobalAveragePooling2D(池化層)  
激活函數(將輸出轉為機率)

# Outline

1 Introduction

2 Methodology

3 Dataset

4 Experimental Evaluation

- 使用ModelCheckpoint函式儲存框架以及權重

# Outline

1 Introduction

2 Methodology

3 Dataset

4 Experimental Evaluation

# Methodology

## File size of model

```
-----  
Layer (type)                Output Shape                Param #  
-----  
densenet121 (Model)         (None, 1, 1, 1024)         7037504  
-----  
global_average_pooling2d_1 ( (None, 1024)         0  
-----  
dense_1 (Dense)             (None, 14)                 14350  
-----  
Total params: 7,051,854  
Trainable params: 6,968,206  
Non-trainable params: 83,648  
-----
```



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- 3 Dataset
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- 使用categorical crossentropy loss function  
因為我們在最後一層使用softmax激活函數計算機率，通常會搭配categorical crossentropy loss function 使用

# Outline

1 Introduction

2 Methodology

3 Dataset

4 Experimental Evaluation

# Methodology

## Optimizer and hyperparameter

- Optimizer使用adam  
沒有使用hyperparameter

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### ● kaggle 競賽提供的資料集43G

The screenshot shows the Kaggle dataset interface for 'iwildcam-2019-fgvc6'. The dataset size is 43 GB. The 'Data Sources' section lists the following files:

- sample\_submission.csv: 154k x 2
- test.csv: 154k x 10
- train.csv: 196k x 11
- test\_images.zip: 1000+ more files
- train\_images.zip

The 'About this file' section states 'No description yet'. The 'Columns' section lists 'Id' and 'Predicted'.

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- 3 Dataset**
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- kaggle 競賽提供

The screenshot shows the Kaggle dataset page for the iWildCam 2019 - FGVC6 competition. The top bar indicates the dataset size is 43 GB. Below this, there are three main sections: Data Sources, About this file, and Columns.

**Data Sources**

- sample\_submission.csv 154k x 2
- test.csv 154k x 10
- train.csv 196k x 11
- test\_images.zip
  - 0081cb4f-2c16-11e9-bcad-06f1...
  - 0116a797-2c0c-11e9-bcad-06f1...
  - 01518e45-2c05-11e9-bcad-06f1...
  - 01b5caa4-2c16-11e9-bcad-06f1...
  - 01e9db66-2c03-11e9-bcad-06f1...
  - 01f6fa10-2bfb-11e9-bcad-06f10...
  - 01f951f6-2c0f-11e9-bcad-06f10...
  - 023a40ec-2c0c-11e9-bcad-06f1...
  - 023a40fd-2c0c-11e9-bcad-06f1...
  - 02977df1-2c15-11e9-bcad-06f1...
  - 1000+ more
- train\_images.zip

**About this file**

No description yet

**Columns**

- Id
- Predicted



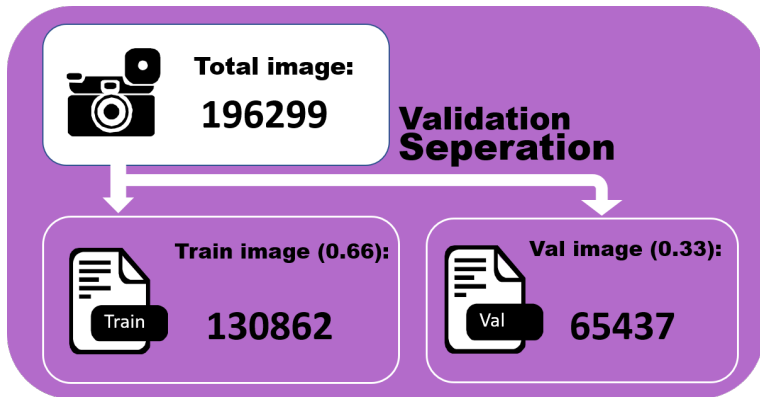
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# Methodology

訓練樣本數量

- 130862張圖片



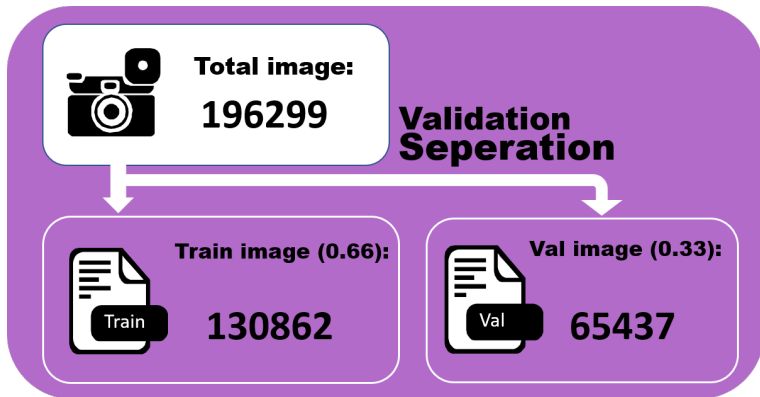
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- 1 Introduction
- 2 Methodology
- 3 Dataset**
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# Dataset

驗證樣本數量

- 65437張圖片



# Outline

- 1 Introduction
- 2 Methodology
- 3 Dataset**
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# Dataset

測試樣本數量

- 153730張圖片

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- 4 Experimental Evaluation**

# Experimental Evaluation

## Experimental environment

- kaggle 競賽提供的kernel

### Sessions

Draft Session | 0m/9h | GPU On 

CPU 0.06%

RAM 247.9MB/13GB

Disk 266.3MB/4.9GB



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# Experimental Evaluation

Epochs of training

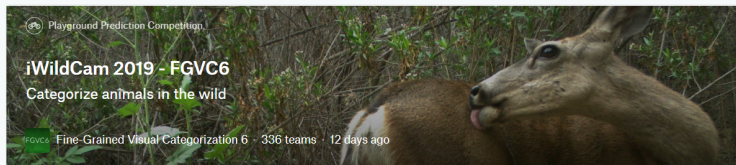
- 35個epochs

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# Experimental Evaluation

Qualitative evaluationQualitative evaluation



Playground Prediction Competition

## iWildCam 2019 - FGVC6

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FGVC6 Fine-Grained Visual Categorization 6 · 336 teams · 12 days ago

Overview Data Kernels Discussion Leaderboard Rules Team My Submissions **Late Submission**

Your most recent submission

Name	Submitted	Wait time	Execution time	Score
submission.csv	7 days ago	0 seconds	2 seconds	0.125

**Complete**

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