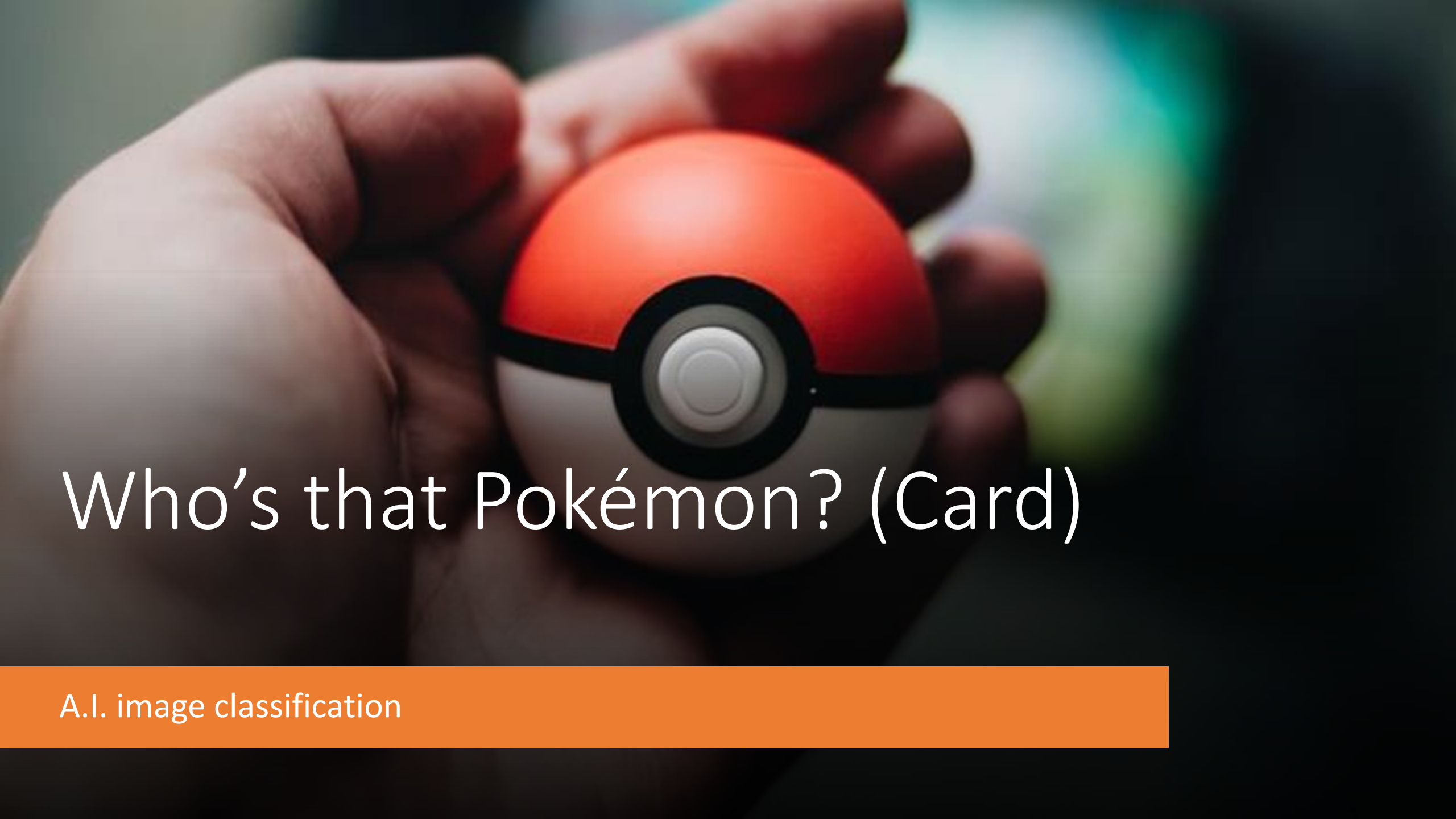


Who’s that Pokémon? (Card)

A.I. image classification

Introduction

- Popular trading card game owned by Nintendo.
- Can collect cards as well as play competitively.
- Individual Cards can be very valuable

Streamer Ludwig stunned by Pokémon Card values

Problem Statement

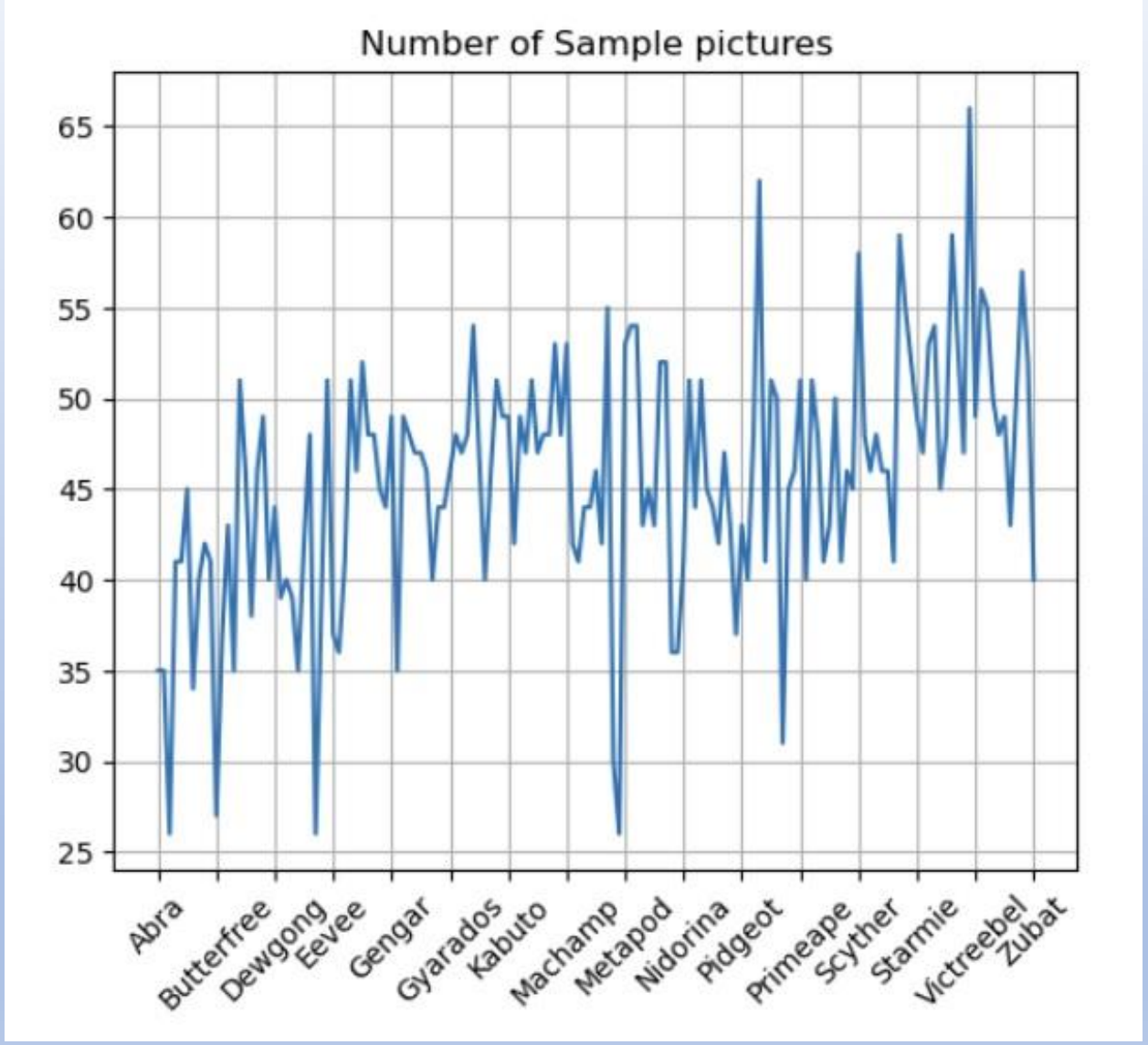
- The goal is to allow players or collectors to add their collections online easily.
- Scanning cards easily gives benefits to hobbyists and investors..
- How can I write a program that can determine what Pokémon card it sees when it detects an image to help people catalogue their collections.
- How to best use Neural networks learn patterns to identify images.

Data Source

- Pokemon TCG API is and PokemonClassifier dataset from Kaggle was used to collect image data.
- https://pokemontcg.io/

Exploratory Data Analysis

- Averange number of pictures is 45.5.
- Venusar, Pikachu, Snorlax and Scyther have the most pictures.
- Null model is 0.95% accurate.



Model/Data Preprocessing

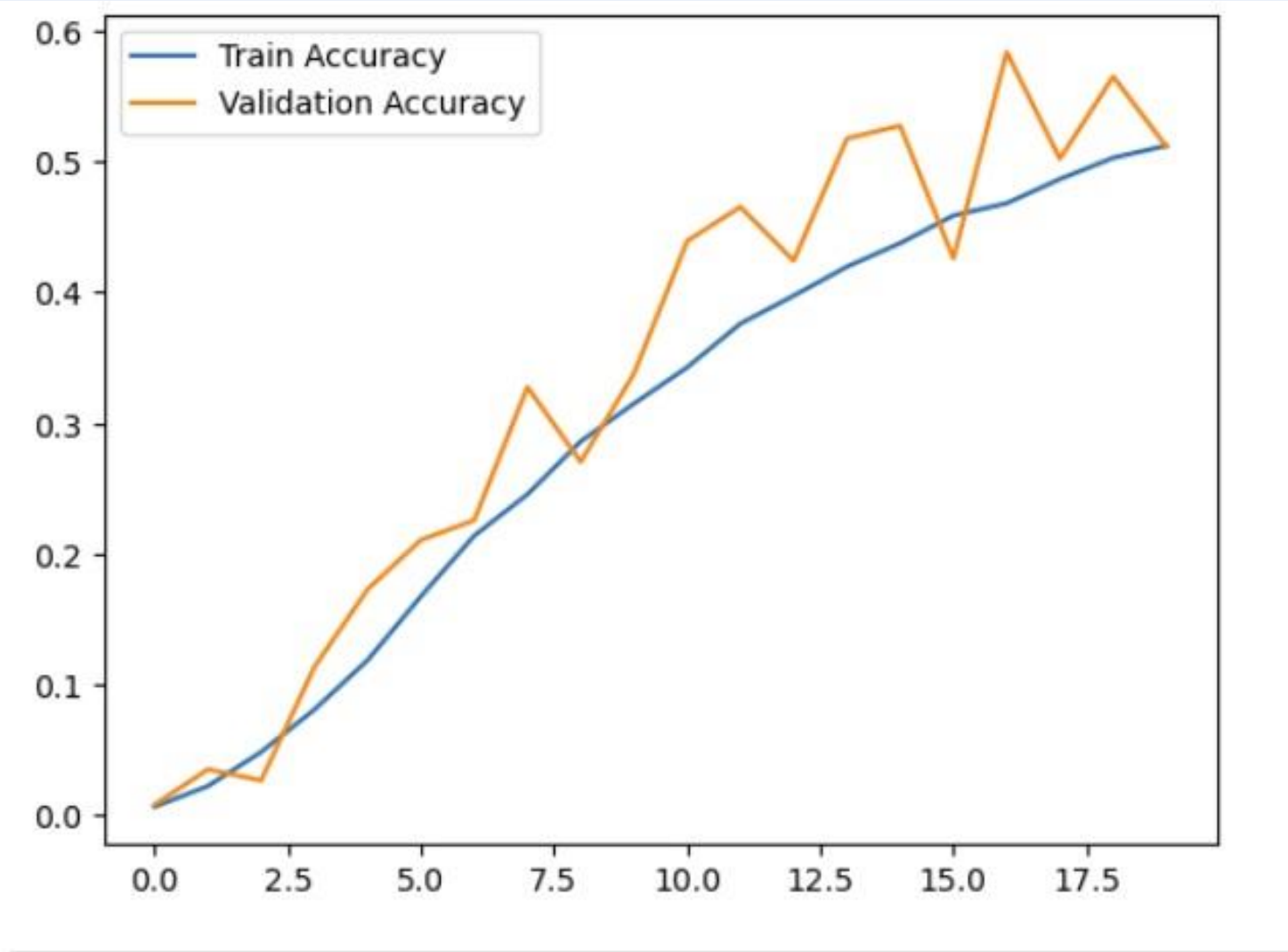
Two Convolutional Neural Network models

```
image_gen_crop = ImageDataGenerator(rotation_range=20,
                                    rescale = 1./255,
                                    width_shift_range=0.1,
                                    height_shift_range=0.1,
                                    shear_range=0.1,
                                    zoom_range=0.1,
                                    horizontal_flip=True,
                                    fill_mode='nearest',
                                    preprocessing_function=crop)
```

Model/Data Preprocessing

Results

- Model 1, Validation Accuracy 51.4%
- Model 2 Validation Accuracy 59.2%



Conclusion/Next steps

- 50% accuracy shows the model is detecting a signal in the card images for classification
- It is difficult to have high accuracy when there are a lot of classes, good idea to use early stopping and drop out layers.
- Can generate fake damage and analyze card for value.


Questions