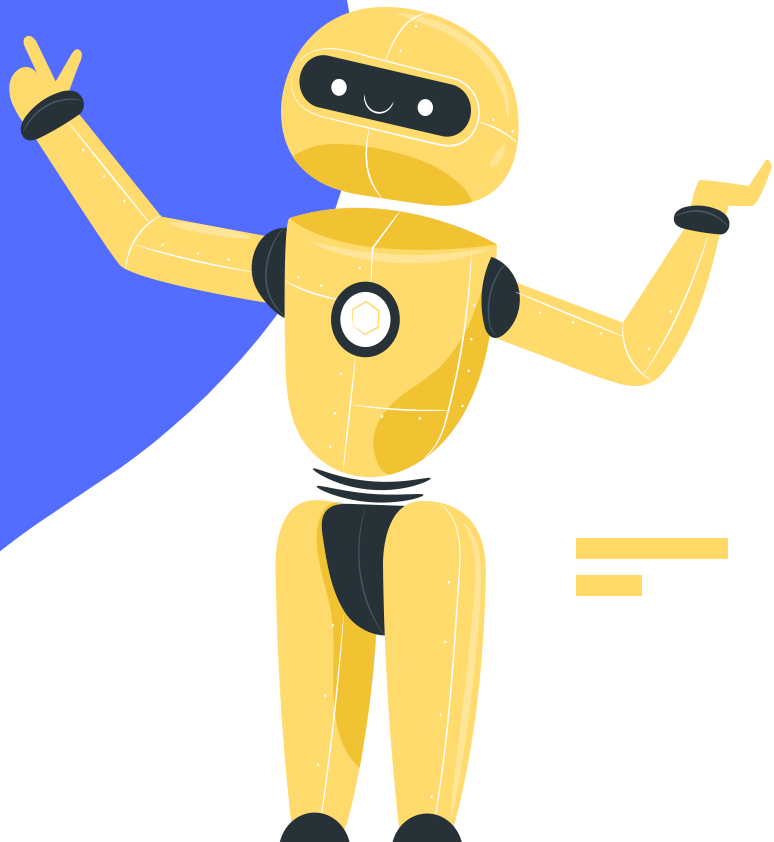
B1RDWATCH

BOT

Emma-Claire McCarthy



OUTLINE

01 THE LIVE STREAMED NEST CAMERA

02 COLLECTING DATA

03 TRAINING A DEEP LEARNING MODEL

04 AUTOMATING REAL TIME CLASSIFICATION

PEREGRINE FALCON CAM

NOTTINGHAMSHIRE WILDLIFE TRUST

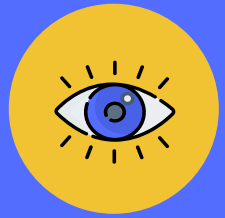
DATASET ASSEMBLY

COLLECT NEST IMAGES

sources: YouTube channel, live stream

LABEL IMAGES BY EYE

adult bird / no adult bird



PARTITION LABELED IMAGES

train, validation, and test

BIRD CLASSIFICATION USING DEEP LEARNING

Feature Vector

Hidden Layers

Dense and
Dropout Layers

Output Layer

Bird | No Bird

MODEL PERFORMANCE ON UNSEEN IMAGES

86%

True Positive Rate

99%

True Negative Rate

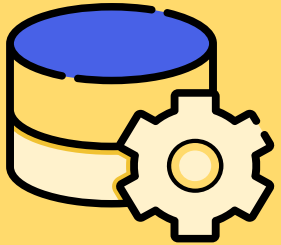
Automated 24-Hour Nest Monitoring

Google Cloud Platform Virtual Machine

images

class

timestamp



WEB SCRAPER

Built with Selenium

CLASSIFICATION MODEL

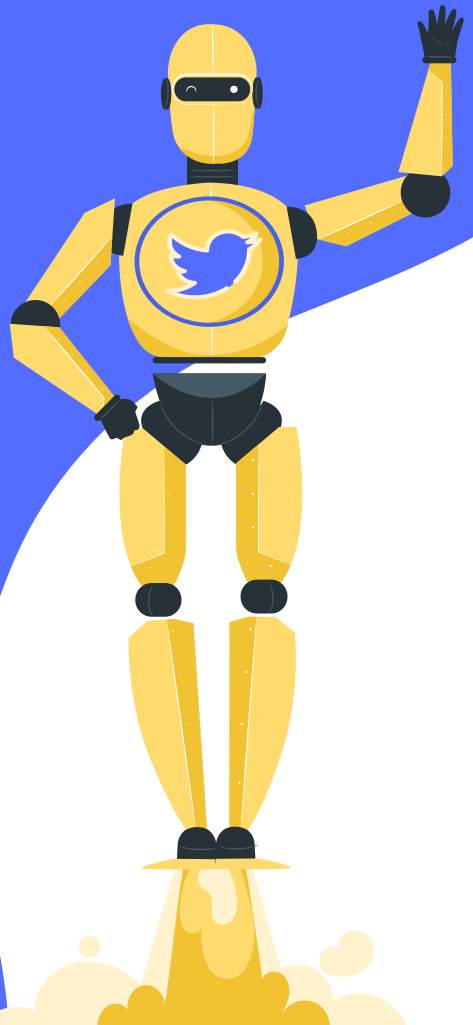
CNN built with Keras

DATABASE

Postgresql with remote access enabled

COMING SOON:

A Twitter bot that tweets about the coming and going of the Nottingham falcon.



THANKS

Questions?

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