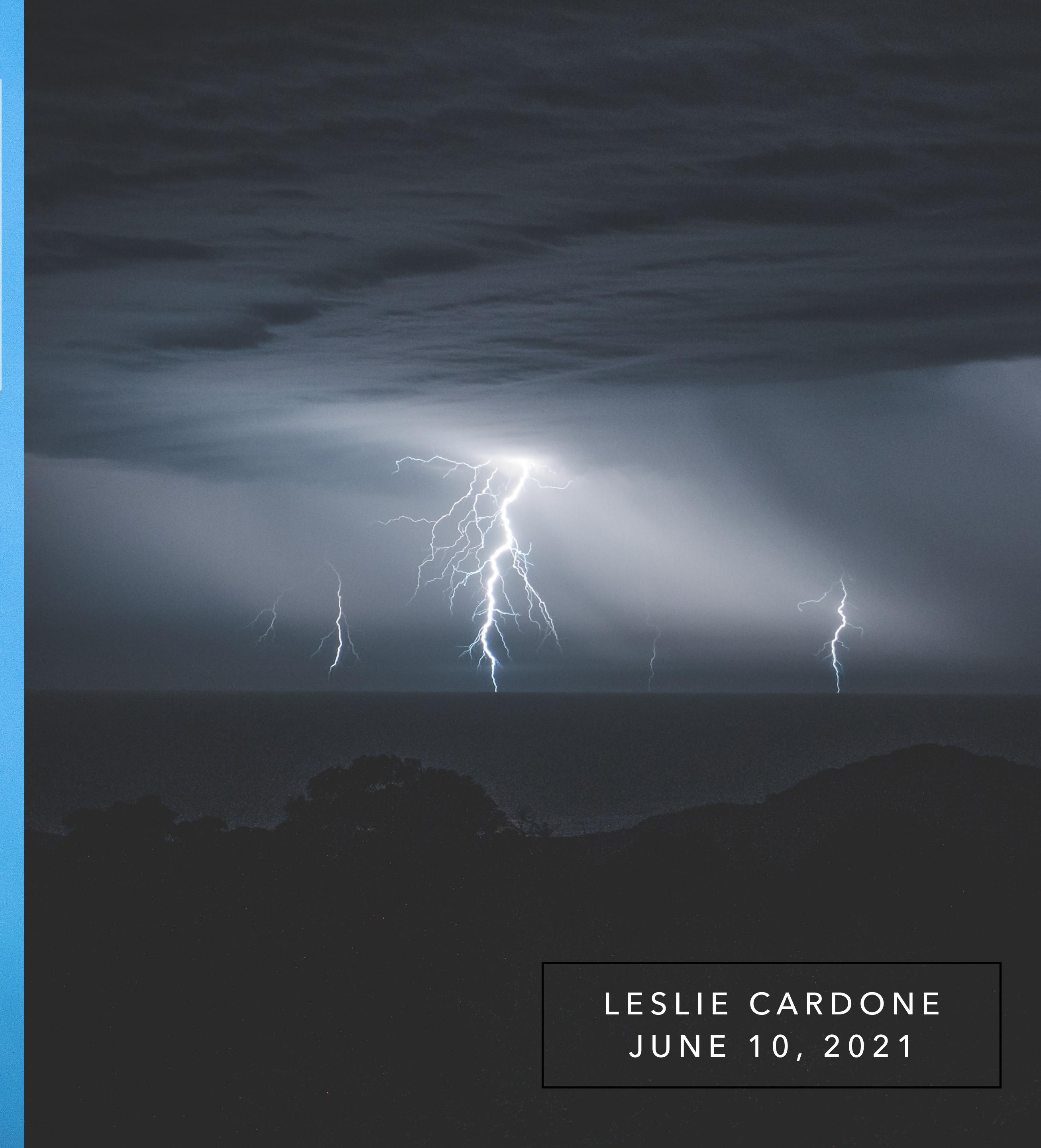
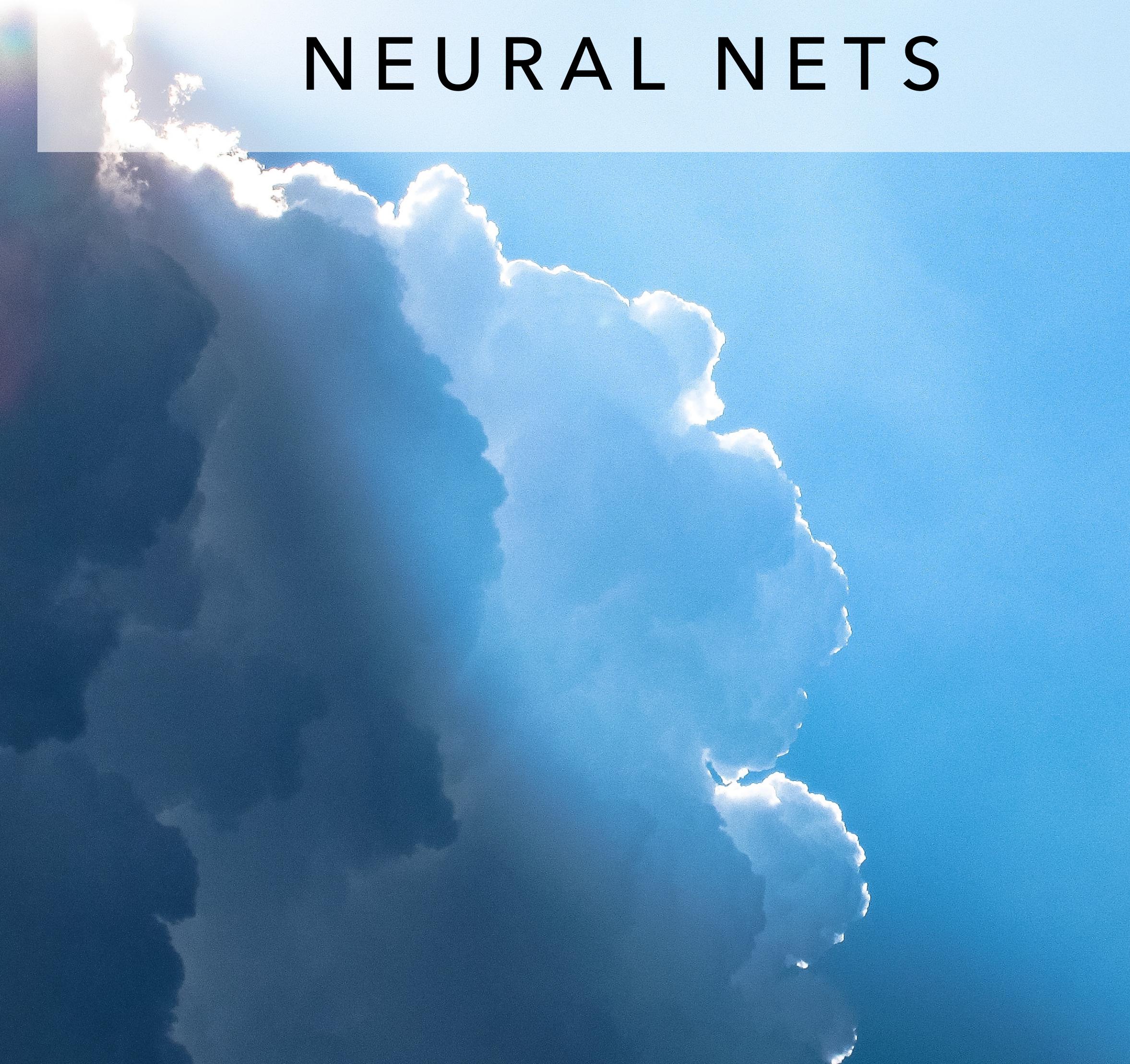


IDENTIFYING MOOD WITH CONVOLUTIONAL NEURAL NETS



LESLIE CARDONE
JUNE 10, 2021

GOALS

Identify whether a person or a group of people in an image are happy or sad

USE

A system that recognizes “happy” photos could suggest which photos to keep and which to discard from a group of similar photos.



DATA



Pexels
FREE STOCK PHOTOS
2250 SAMPLES

SAD

HAPPY

METHODS

CNN BASELINE

4 CONVOLUTIONAL LAYERS

4 MAX POOLING LAYERS

2 DENSE LAYERS

67% VALIDATION ACCURACY



METHODS

CONSECUTIVE MODELS

IMAGE AUGMENTATION

**TRANSFER LEARNING WITH
~~VGG16 AND MOBILE NET~~**

~~MORE DENSE LAYERS~~

77% VALIDATION ACCURACY

76% TEST ACCURACY



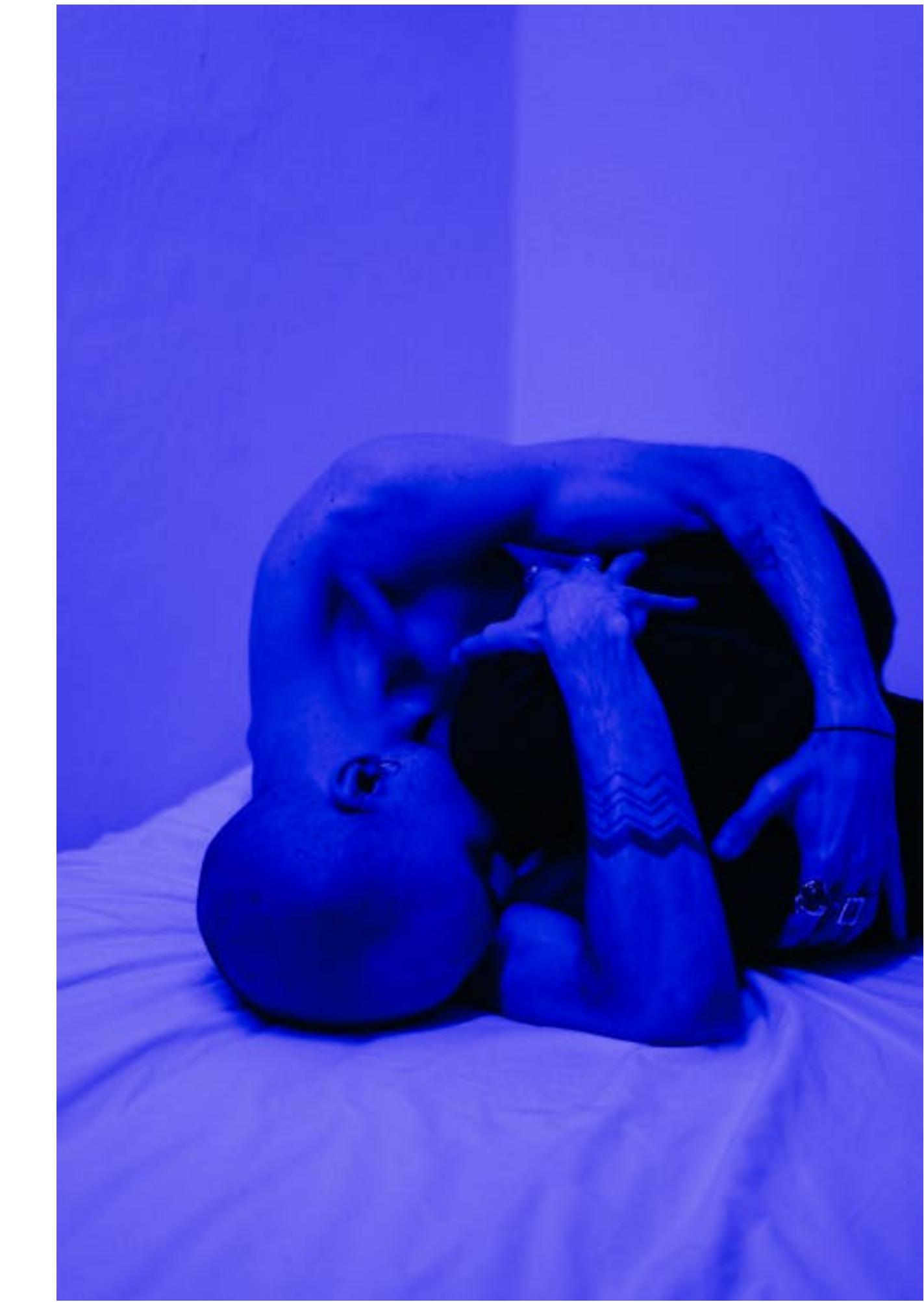
FINDINGS

SAD AS HAPPY: WHY WERE THESE INCORRECTLY IDENTIFIED?



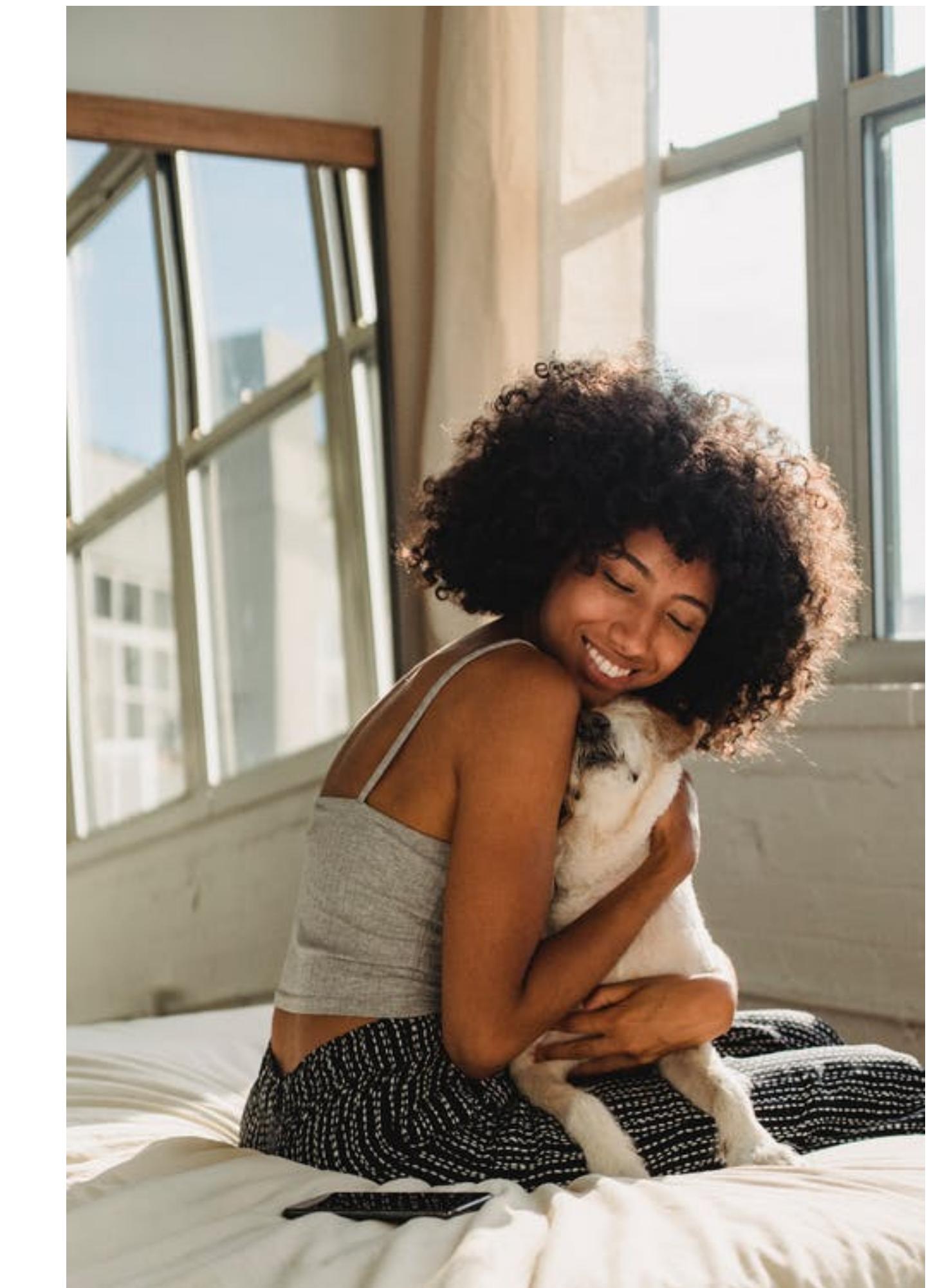
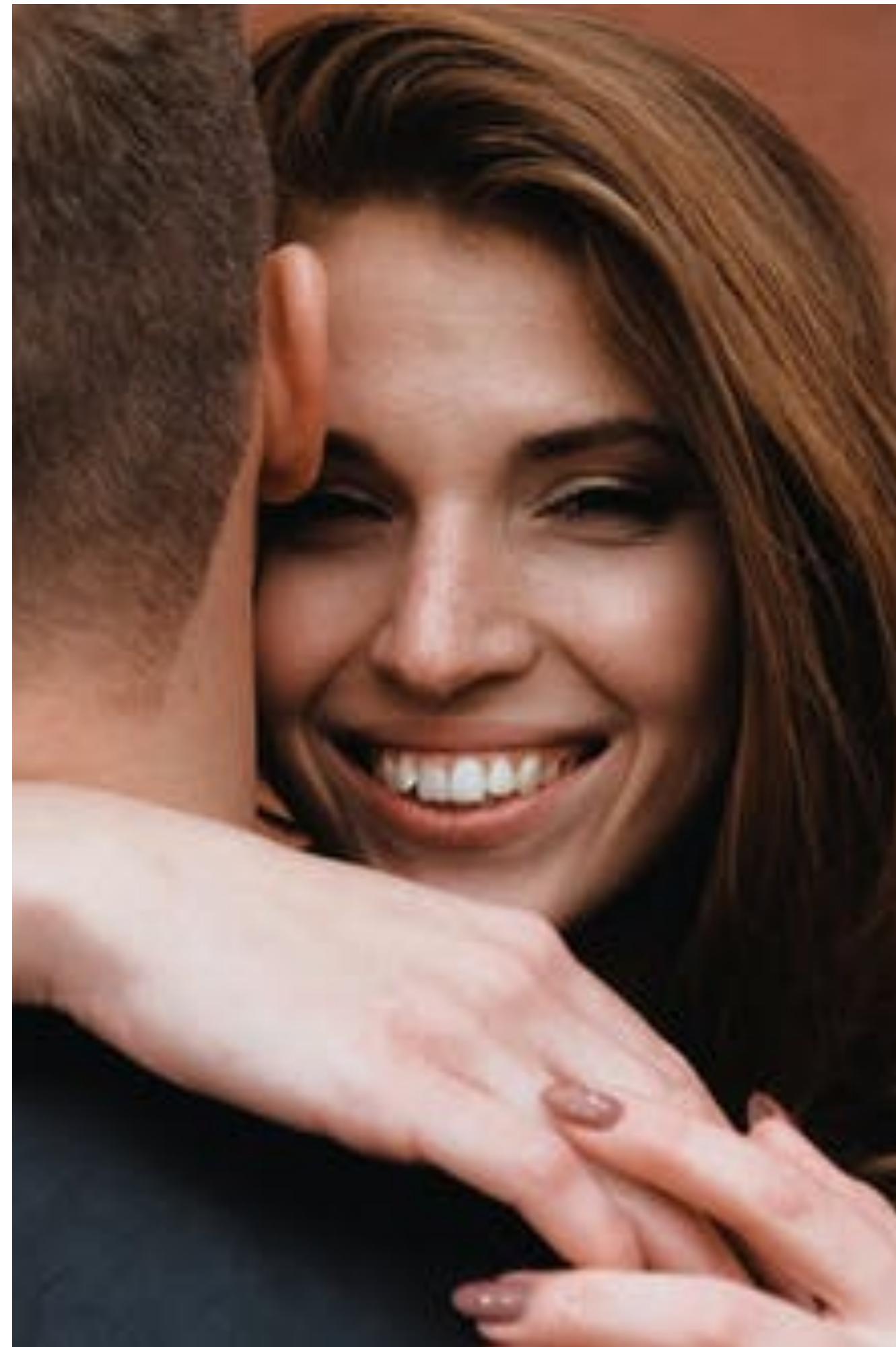
FINDINGS

SAD AS HAPPY: NOISY IMAGES



FINDINGS

HAPPY AS SAD: WHY WERE THESE INCORRECTLY IDENTIFIED?



FINDINGS

HAPPY AS SAD: NOISY IMAGES



FURTHER STUDIES

Collect more samples + clean noisy samples

Expand classes to more moods
(surprised, angry, etc)

Dig deeper into what the CNN is picking up on in my specific model

H
A
P
P
Y

FINDINGS

TF-KERAS-VIS

Happy 1



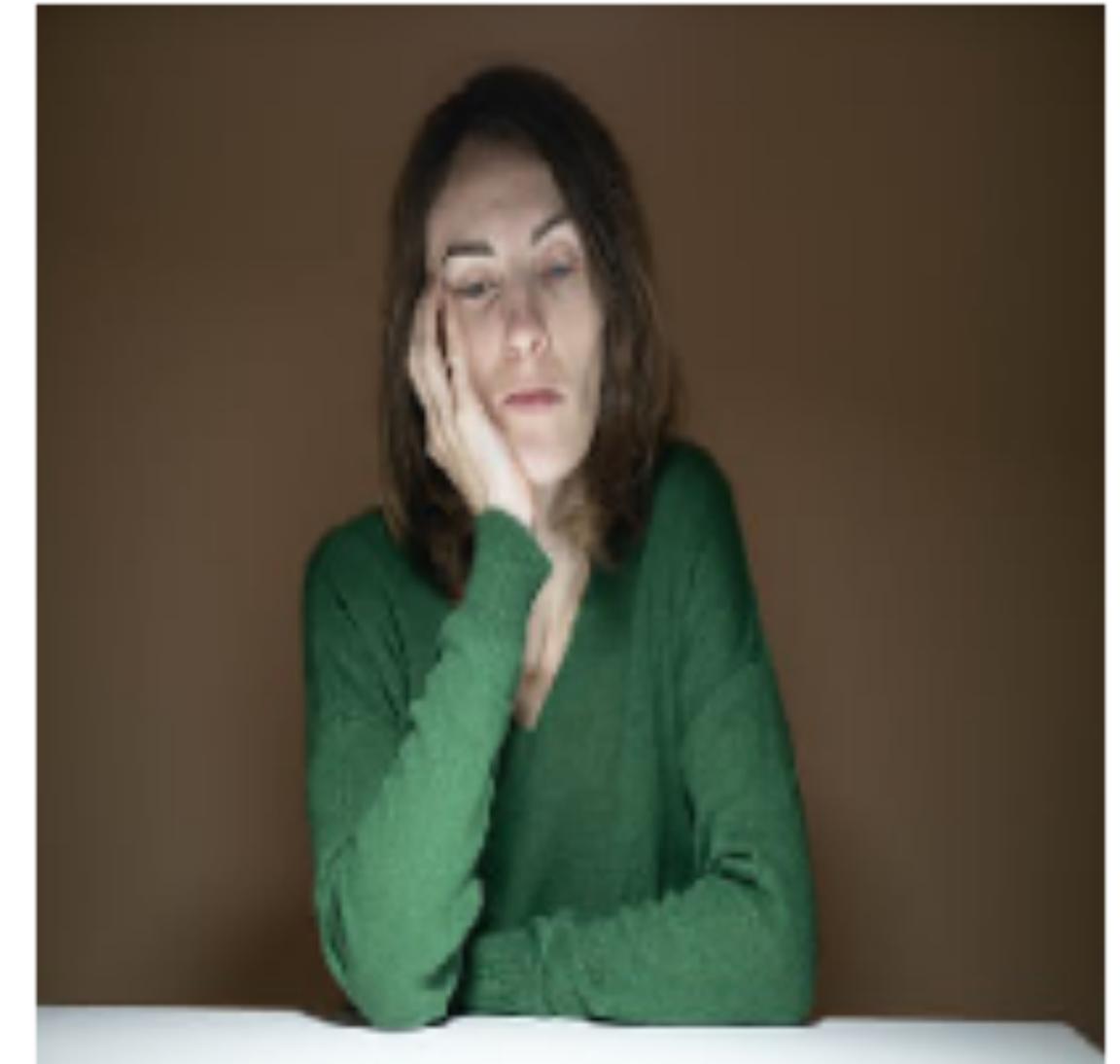
Happy 2



Sad 1

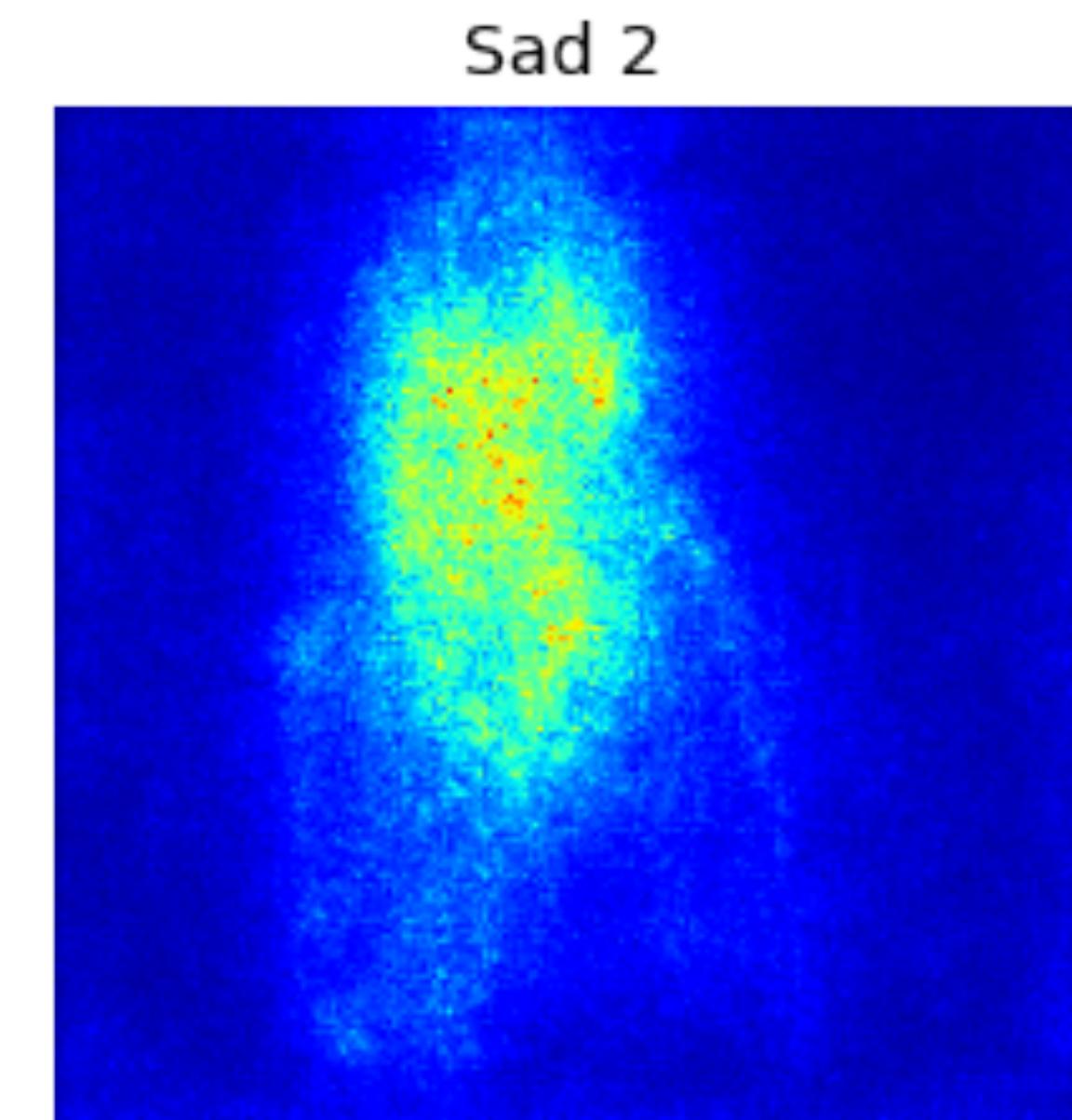
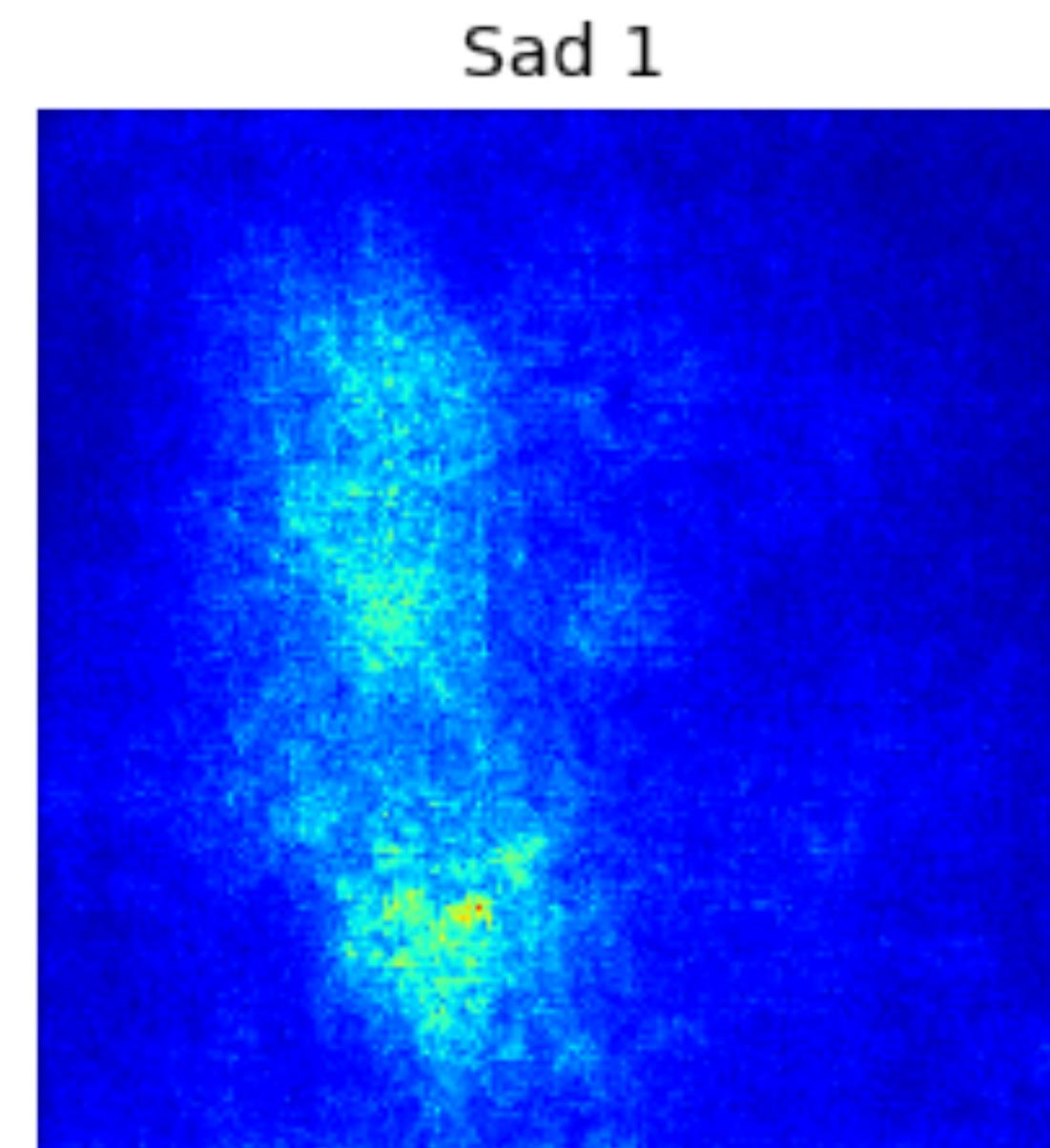
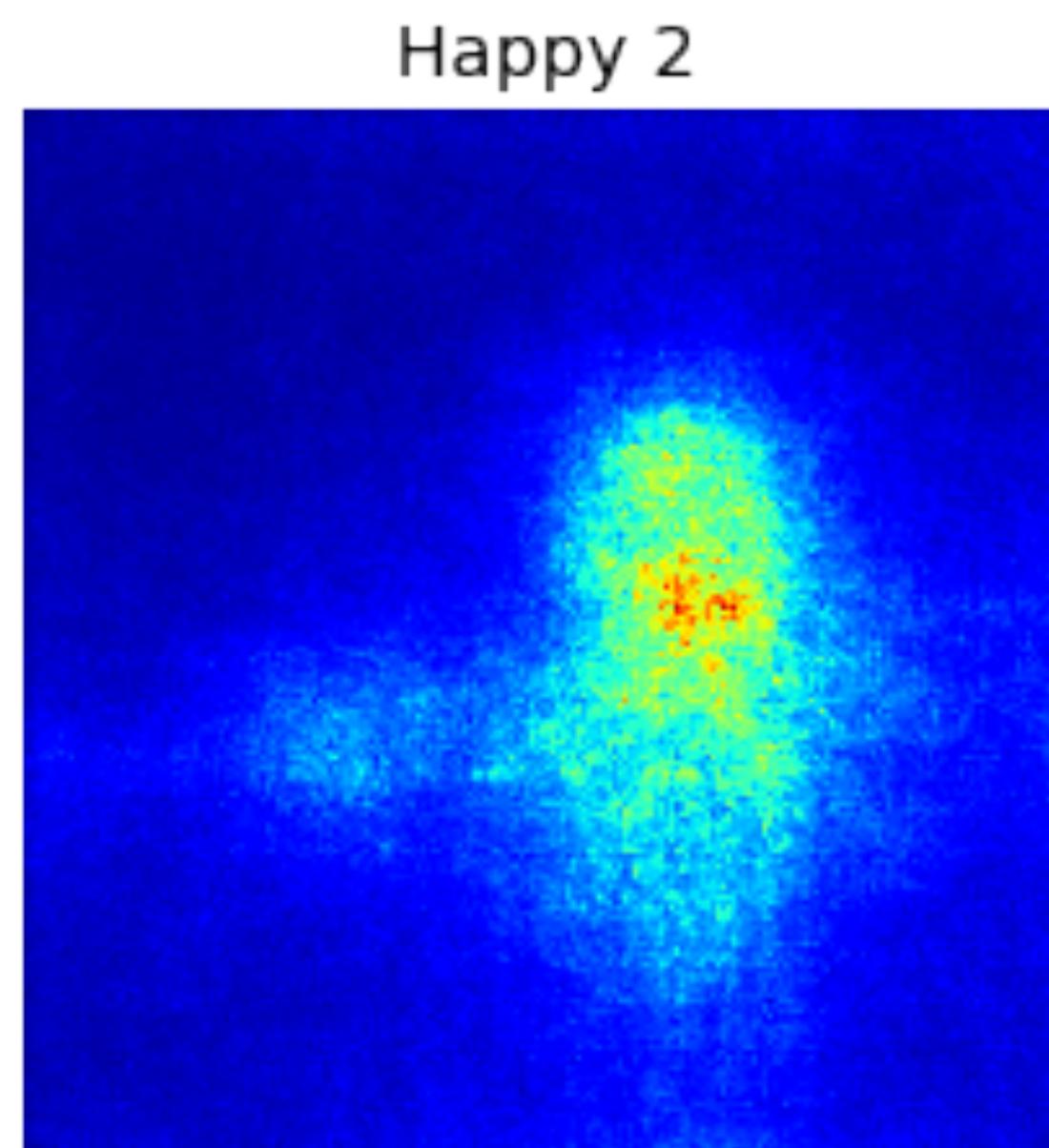
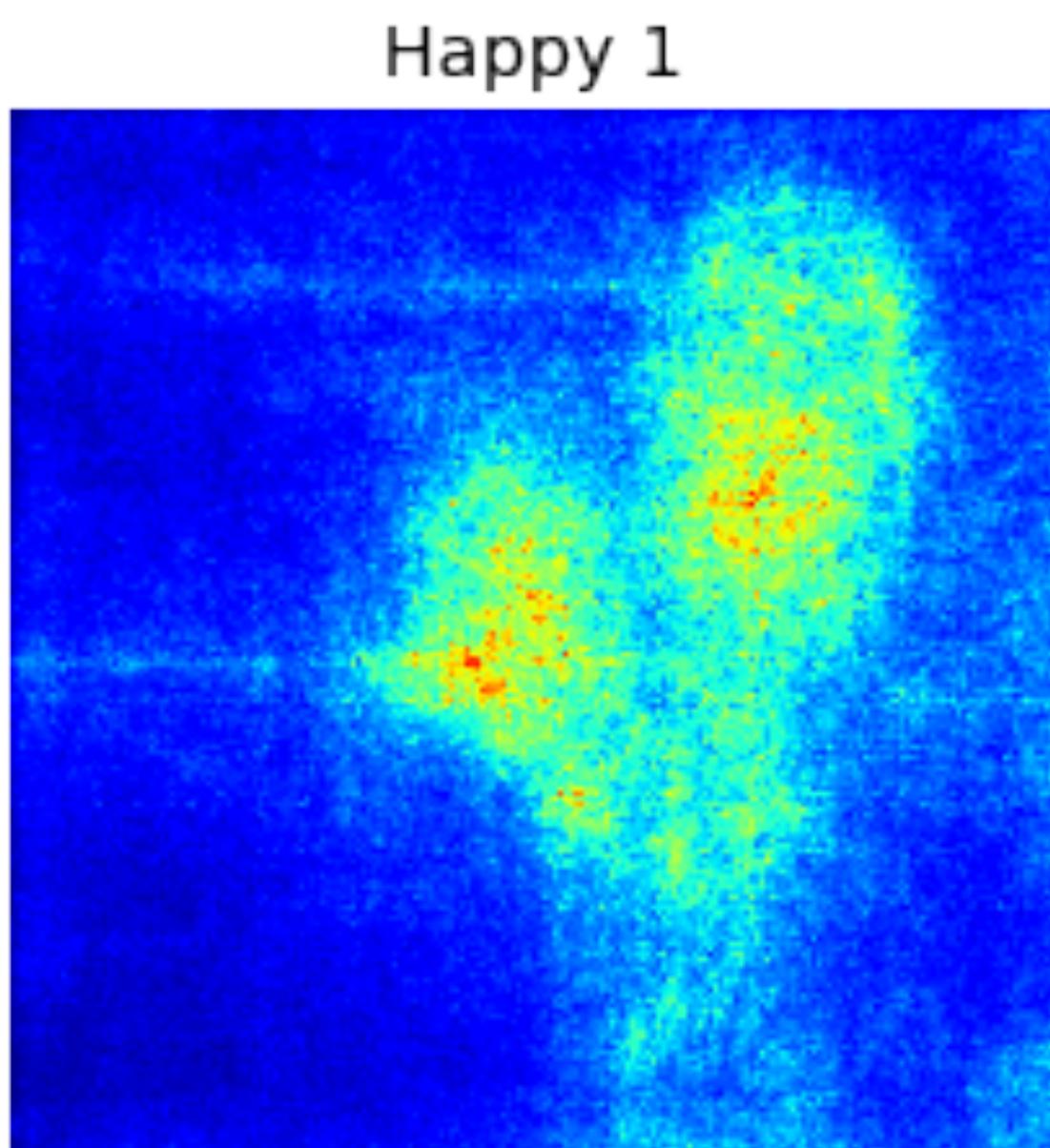


Sad 2



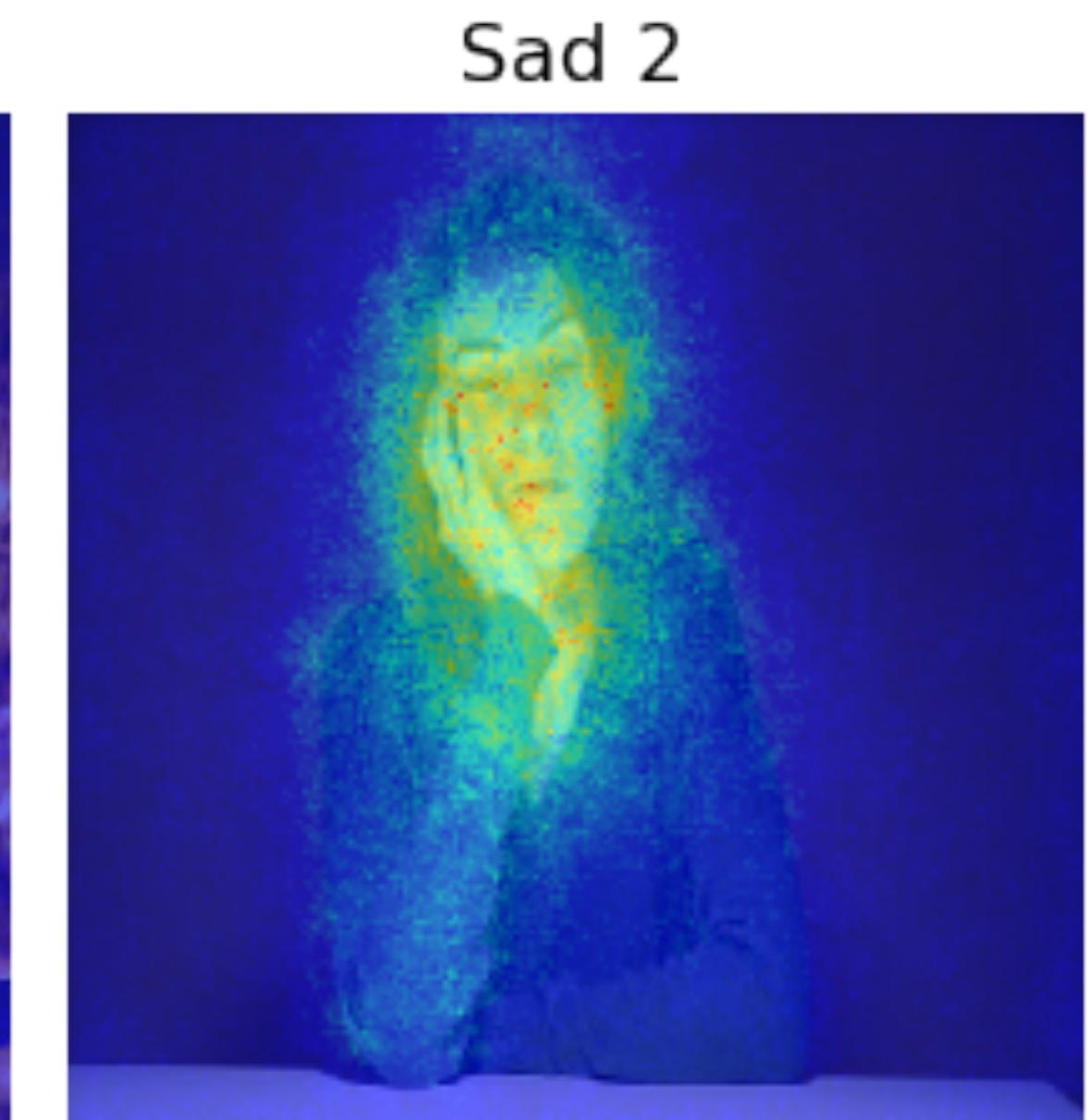
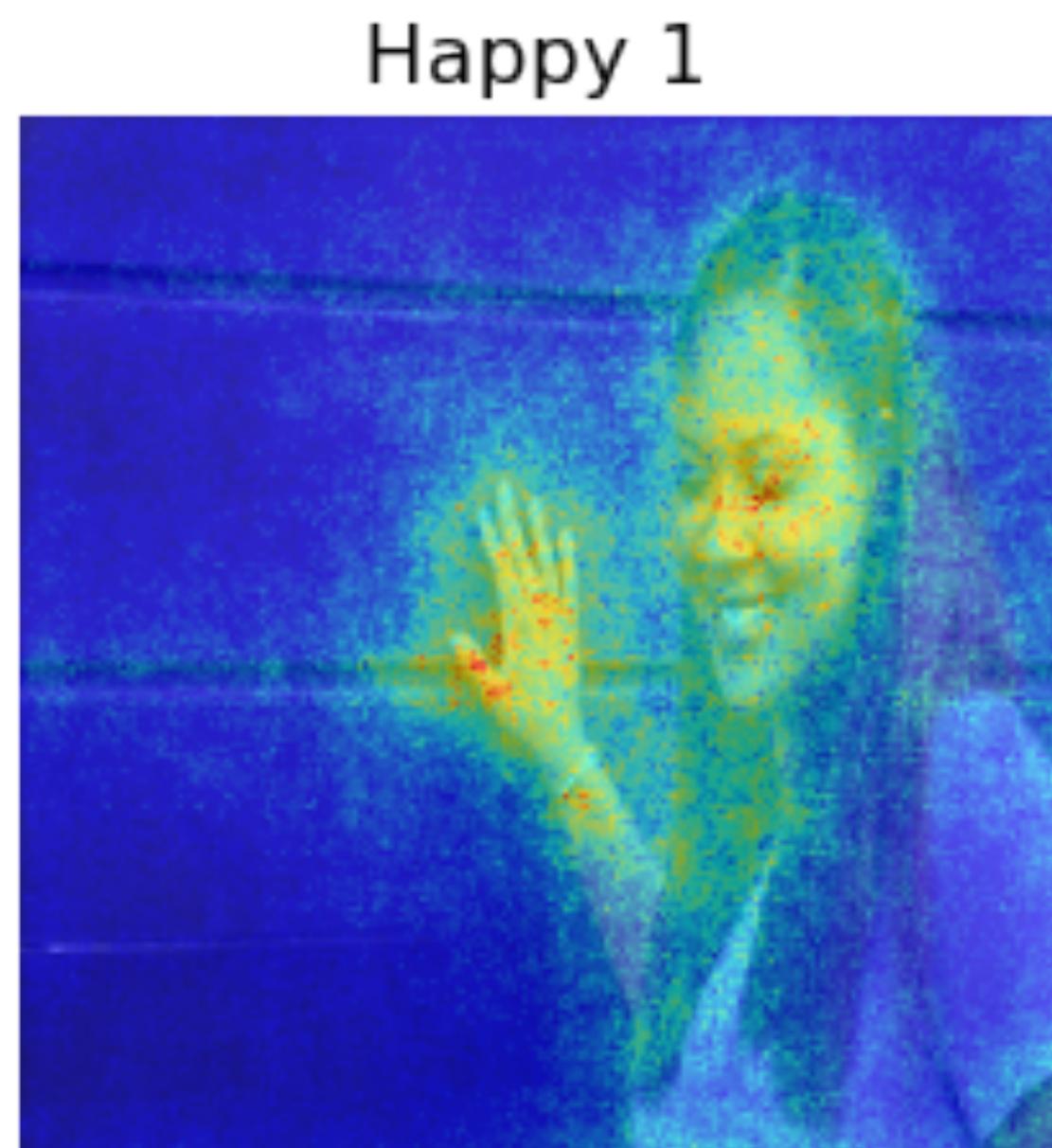
FINDINGS

TF-KERAS-VIS



FINDINGS

TF-KERAS-VIS



"BALL PLAYER"

"GROOM"