



**Politechnika
Śląska**

Project documentation

BIO 2020/2021

Biometrics

Major: Computer Science

Team members:

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Internet, 2020/2021

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1 Introduction

1.1 Goal of the project

The main assumption of the project was the possibility of creating a good model of face detection detector to improve the mood of the user who uses the computer daily. By using the computer every day, spending time sitting at the computer as a place of work, a source of income, and after hours as a place to relax, the influence of blue light emitted by the computer screen can cause depression and nausea in a person. Therefore, we come to the rescue with our application that detects the bad condition of the client - on the principle of detecting sadness on the face and in the event of detecting a bad condition, the application appears on the screen with comforting and joyful advertisements of various products that are associated with happiness, care and a state of euphoria.

1.2 Project team

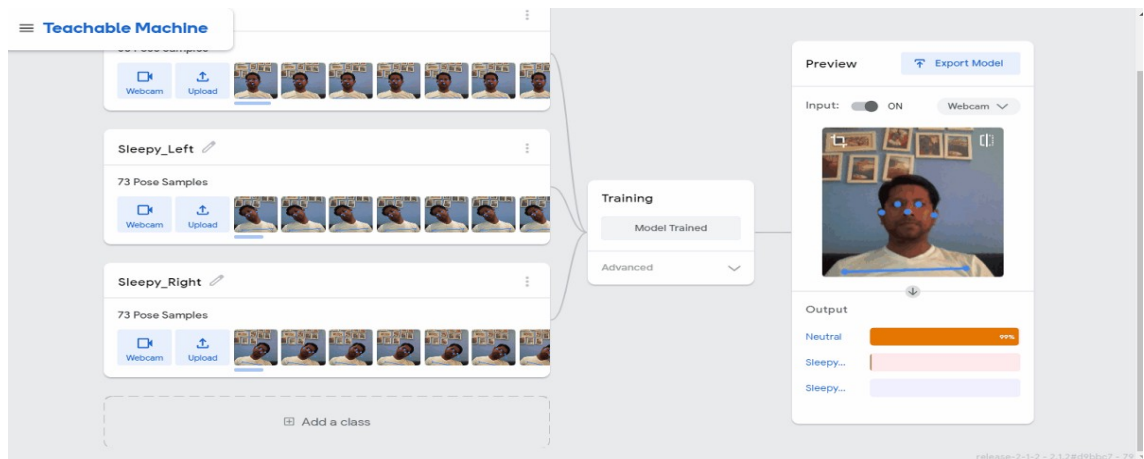
Piotr Sobieszczyk- a person responsible for creating a face base and training a face model that will correctly predict whether the face is sad or happy

Adaś Kierat- The person responsible for handling the project, i.e. providing the program with the appropriate output class for the prediction of our data based on the face and integration with the program

Karol Nawrot- The person responsible for the graphic appearance of the application, correct placement of advertisements in the case of well-detected sadness on the client's face and integration with the program

2 Project assumptions

Using google teachable machine, correct prediction of a smile or sadness on the face, creating a transparent UI of our application, the possibility of extending the application by adding, for example, a more obvious message when we are happy.



3 Implementation

A sample piece of the source code that shows how to use the prediction model

```
function setup() {
  createCanvas(960, 540);
  // Create the video
  video = createCapture(VIDEO);
  video.size(213, 160);
  video.hide();
  flippedVideo = ml5.flipImage(video);
  // Start classifying
  classifyVideo();
}

function draw() {

  fill(255);
  textSize(16);
  textAlign(CENTER);
  text(label, width / 2, height - 4);

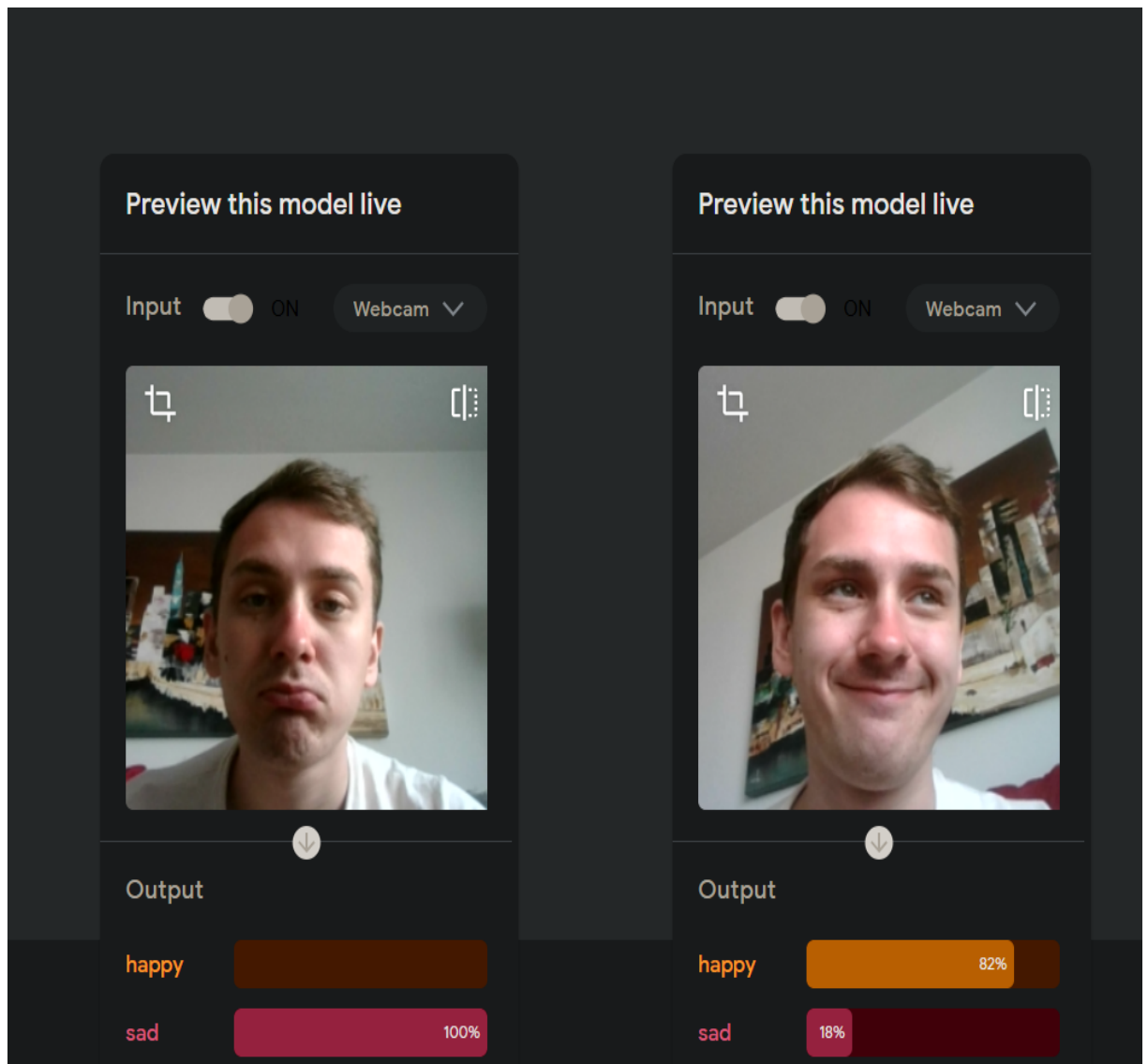
  background(bgimage);
  // Draw the video
  image(flippedVideo, 730, 364);

  // Draw the label
  if (label == "sad") {
    gif_createImg2.size(0, 0);
    gif_createImg.size(400, 50);
    gif_createImg.position(300, 70);
    gif_createImg3.size(200, 200);
    gif_createImg3.position(20, 130);
    gif_createImg4.size(250, 200);
    gif_createImg4.position(230, 130);
```

detecting sad facial expressions and loading ad pictures

4 Experiment / Testing

Testing our application initially consisted in training the model and checking its correctness by only testing whether the detected face is considered sad or happy, then after testing the model and getting the most correct, we went to code implementation and application development



5 Summary and Conclusions

- *Summary* We managed to create an application that accurately detects the state of our humor by detecting whether we are smiling or not. The application helps people who may fall into depression in a more or less satisfactory way by sitting at the computer for too long and spending time only with it by reacting as quickly as possible to the client's health condition
- *Conclusions* We are satisfied with the appearance of the application and its way of operation, we see many possible improvements or better calling it extensions of our application and the possibility of its further development. The application is likely to be very helpful for people addicted to the computer.

6 Bibliography

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