Image Recognition with Teachable Machine

Introduction

After working with Teachable Machine in Week 2 (From data to value I with Talko), I decided to further work with it. In class we trained a dog-class and a cat-class and learned, what to take into consideration when choosing pictures for a class.

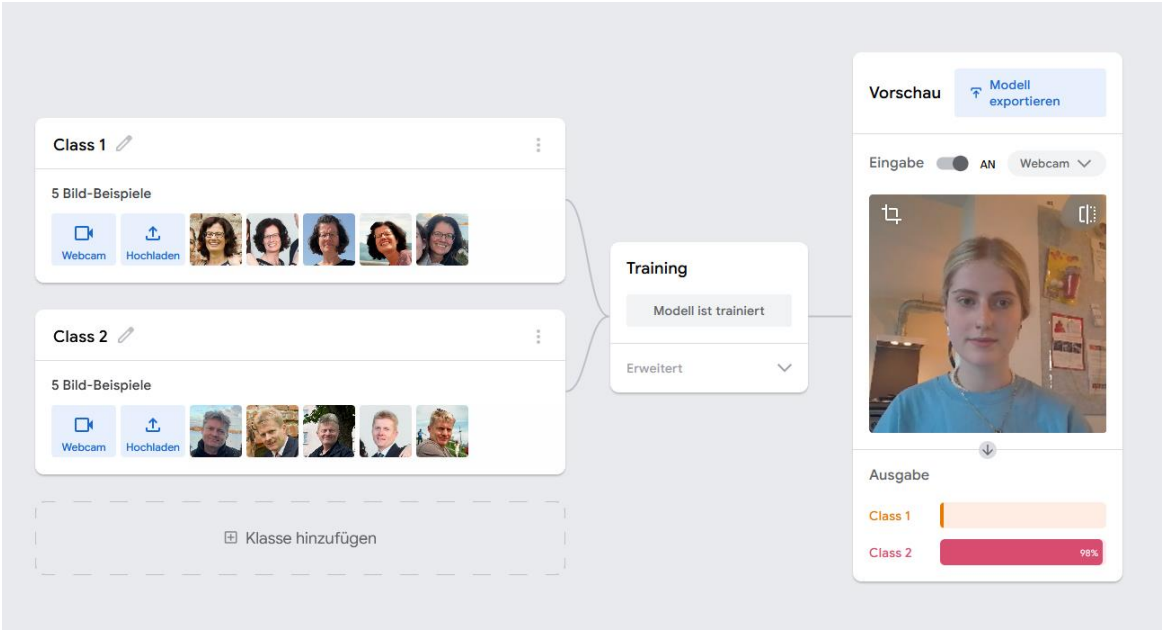
I decided to try it with one class consisting of pictures of my mom and one of my dad, so I can have a model that tells me, which parent I resemble more.

My parents are both between 50 and 60 years old, German, but have quite different features. My mom has a dark curly bob and wears dark-framed glasses and my dad has light blonde short hair, no glasses.

When choosing pictures of the two I took into account:

- Similar cropping of the pictures
- Varying but similar backgrounds
- Varying but similar lighting,
- Varying but similar expressions.

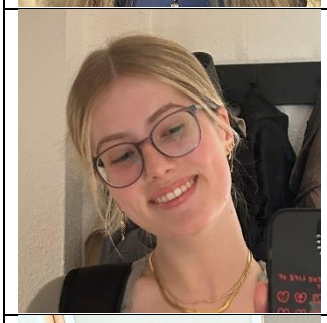
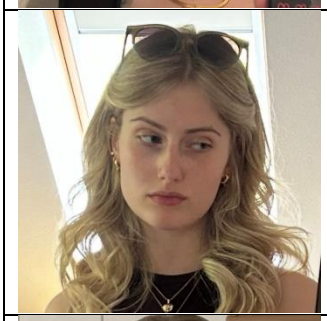
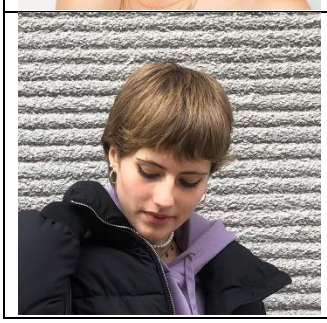
When choosing pictures of myself I tried to use as many different ages, hairstyles, hair colours, lightings and expressions as possible.

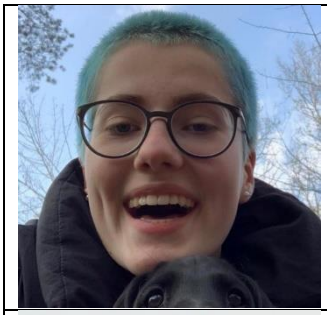
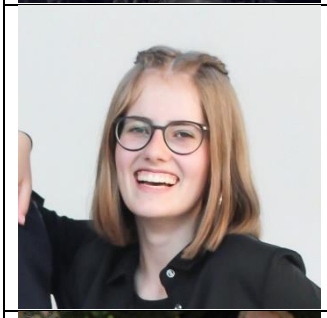
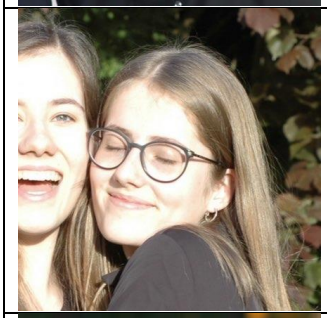


I also tried the camera feature of Teachable Machine when working on this. As shown in the screenshot above, on the first try I got a 99% match, which met my expectations. I am wearing no glasses, I have blond hair and since I'm wearing it up, there is not a lot of hair shown onscreen.

Results

The results for the test pictures are in the following table, pictures are listed in descending age:

Picture	Description	Prediction	Class	Confidence Score
	- 20 - Blond - Smile - No glasses - Weird lighting (no similar pics in model)	70% Dad 30% Mom	Mom	97%
	- 18 - Glasses - Dark blonde - Hair up - Teeth	30% Dad 70% Mom	Mom	100%
	- Blonde - Wavy Hair - Very Serious	50% Dad 50% Mom	Mom	100%
	- Glasses - Prominent Hair - Bad lighting	30% Dad 70% Mom	Mom	100%
	- 17 - No glasses - Other perspective than model phtotos - Teeth - Wavy hair	50% Dad 50% Mom	Mom	100%
	- 16 - Short hair - Dark blonde - Other perspective than model photos	100% Dad	Dad	99%

	- 15 - Short hair - Blue hair - Glasses - Teeth	30% Dad 70% Mom	Mom	97%
	- 14 - Glasses - Light hair - Teeth	20% Dad 80% Mom	Mom	73%
	- Glasses - Other perspective than model photos - Bad lighting	20% Dad 80% Mom	Mom	98%
	- 13 - Glasses - Hair up - Teeth	30% Dad 70% Mom	Mom	98%

Discussion

While I tried to focus a lot on the errors we encountered in class already, so taking a similar amount of each class, similar settings of each class, different positions within a class, I did not consider the fact, that Teachable Machine is most likely to differentiate between male and female by itself.

And since I am female, I will always be more likely to be put into the mom category, even with no glasses and light hair. While I focused my prediction on the key features of my parents and mine in the respective picture, the model does indeed not know my parents.

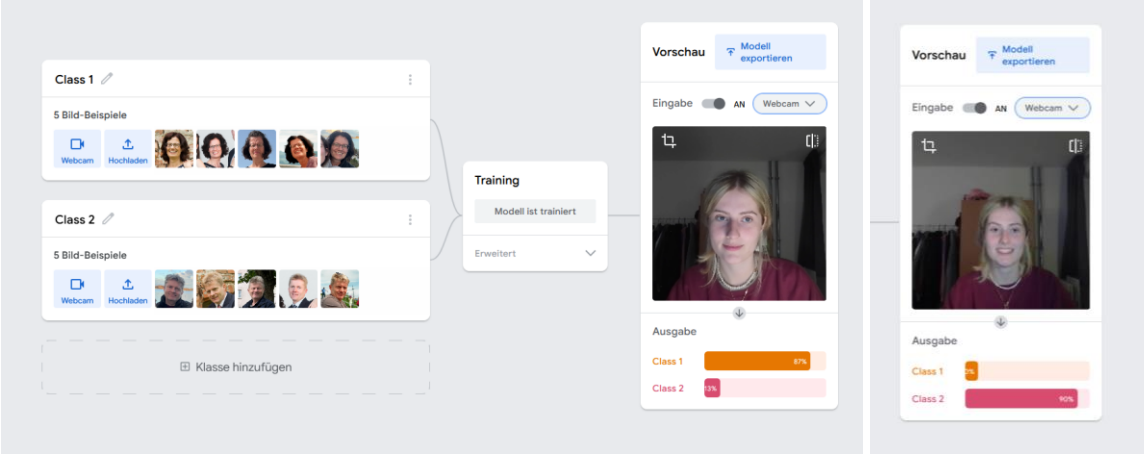
My thought process: mom < picture > dad

My model's process: woman < picture > dad

(Something like that).

I did consider also trying pictures of my sister, but since she does have fair skin, dark hair and is indeed also female, I don't think there would be much shock value in the outcome.

Sadly, I don't have enough pictures of my extended family to turn my parent-model into a family-tree-model, but I think that would be interesting too.



These are the camera results from later the day I trained the model and while I see the difference in my own appearance (solely through light), I can't really comprehend how they're so drastically different.

I think this was an awesome project to start my portfolio though!