Attractiveness Predictions

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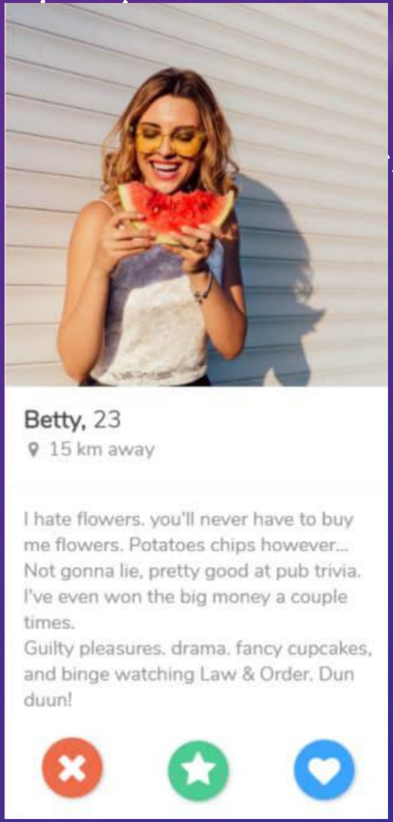
Model

Predict attractiveness score of males and females based on their features

- Images
- Facial Measurements
- Race
- Facial Expressions

Data Collection

- Our goal was to web-scrape and collect profile photos from Tinder’s web app. We would then train a model on the binary decision to swipe left or right depending on the image



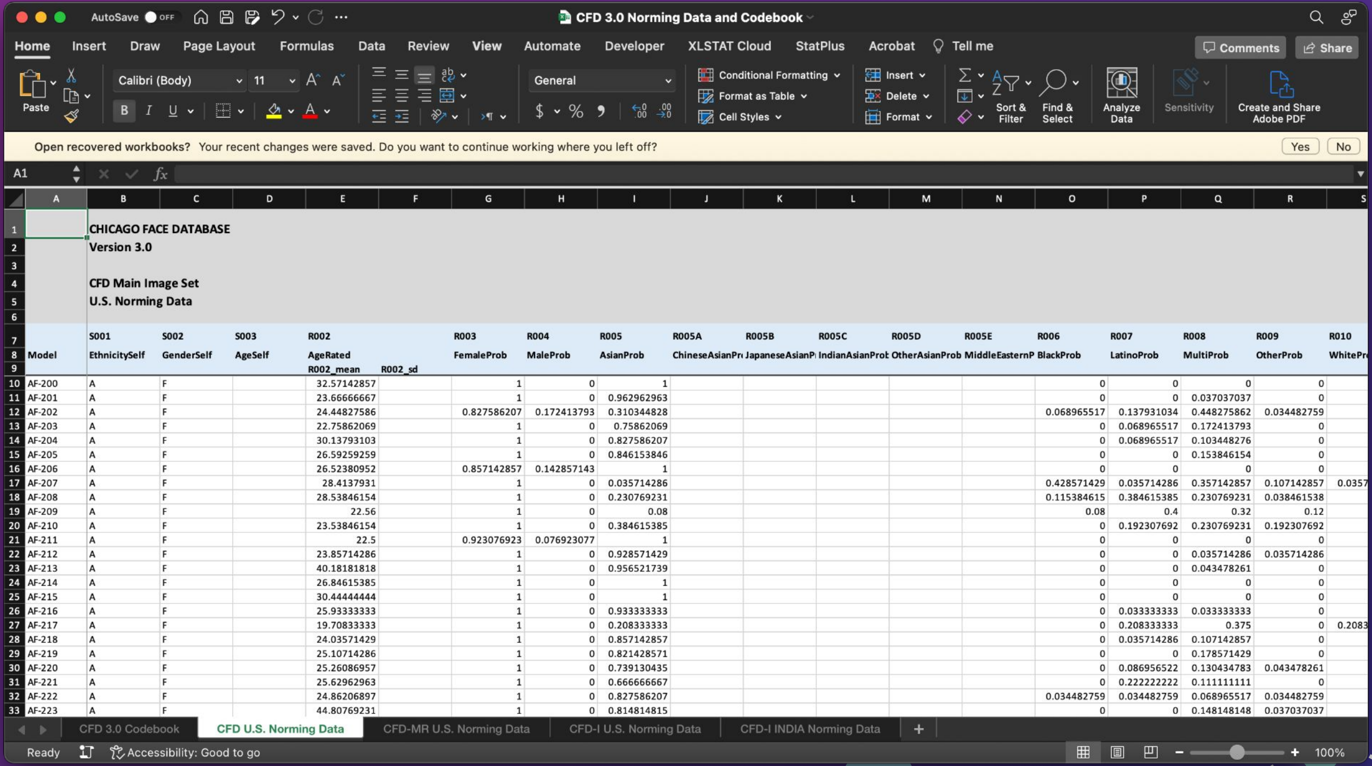
You Have Been Banned From Tinder

It's important to us that Tinder is a welcoming and safe space for everyone. Unfortunately, we found that you violated our Terms of Use and so we've made the decision to remove you from the Tinder Platform.

You will no longer be able to access your Tinder account or create new accounts in the future.

Please note that if you are subscribed to any premium services through the App Store or Google Play, you will need to cancel your subscription with the appropriate provider.

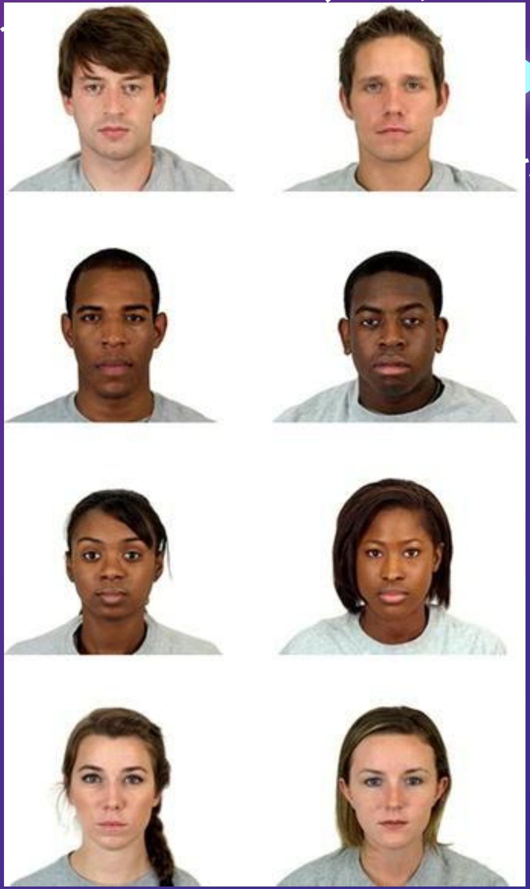
Dataset Sample



Model	S001 EthnicitySelf	S002 GenderSelf	S003 AgeSelf	R002 AgeRated R002_mean	R002_sd	R003 FemaleProb	R004 MaleProb	R005 AsianProb	R005A ChineseAsianPr	R005B JapaneseAsianP	R005C IndianAsianProb	R005D OtherAsianProb	R005E MiddleEasternP	R006 BlackProb	R007 LatinoProb	R008 MultiProb	R009 OtherProb	R010 WhitePr
AF-200	A	F		32.57142857		1	0	1						0	0	0	0	
AF-201	A	F		23.66666667		1	0	0.962962963						0	0	0.037037037	0	
AF-202	A	F		24.44827586		0.827586207	0.172413793	0.310344828						0.068965517	0.137931034	0.448275862	0.034482759	
AF-203	A	F		22.75862069		1	0	0.75862069						0	0.068965517	0.172413793	0	
AF-204	A	F		30.13793103		1	0	0.827586207						0	0.068965517	0.103448276	0	
AF-205	A	F		26.59259259		1	0	0.846153846						0	0	0.153846154	0	
AF-206	A	F		26.52380952		0.857142857	0.142857143	1						0	0	0	0	
AF-207	A	F		28.4137931		1	0	0.035714286						0.428571429	0.035714286	0.357142857	0.107142857	0.0357
AF-208	A	F		28.53846154		1	0	0.230769231						0.115384615	0.384615385	0.230769231	0.038461538	
AF-209	A	F		22.56		1	0	0.08						0.08	0.4	0.32	0.12	
AF-210	A	F		23.53846154		1	0	0.384615385						0	0.192307692	0.230769231	0.192307692	
AF-211	A	F		22.5		0.923076923	0.076923077	1						0	0	0	0	
AF-212	A	F		23.85714286		1	0	0.928571429						0	0	0.035714286	0.035714286	
AF-213	A	F		40.18181818		1	0	0.956521739						0	0	0.043478261	0	
AF-214	A	F		26.84615385		1	0	1						0	0	0	0	
AF-215	A	F		30.44444444		1	0	1						0	0	0	0	
AF-216	A	F		25.93333333		1	0	0.933333333						0	0.033333333	0.033333333	0	
AF-217	A	F		19.70833333		1	0	0.208333333						0	0.208333333	0.375	0	0.2083
AF-218	A	F		24.03571429		1	0	0.857142857						0	0.035714286	0.107142857	0	
AF-219	A	F		25.10714286		1	0	0.821428571						0	0	0.178571429	0	
AF-220	A	F		25.26086957		1	0	0.739130435						0	0.086956522	0.130434783	0.043478261	
AF-221	A	F		25.62962963		1	0	0.666666667						0	0.222222222	0.111111111	0	
AF-222	A	F		24.86206897		1	0	0.827586207						0.034482759	0.034482759	0.068965517	0.034482759	
AF-223	A	F		44.80769231		1	0	0.814814815						0	0	0.148148148	0.037037037	

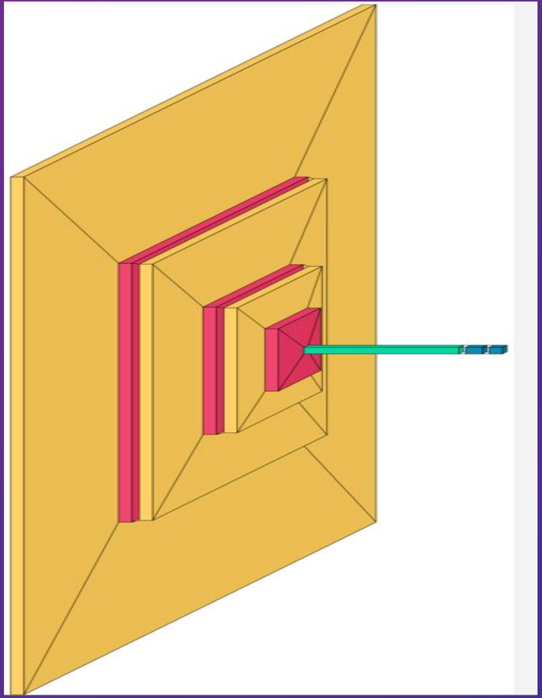
About the Data

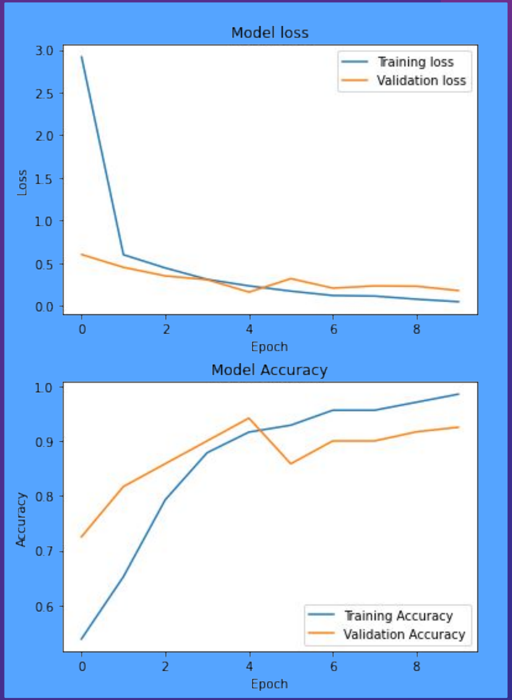
- We care primarily about Attractiveness, Gender, and Age, since those are key considerations on dating apps
- Each face was labeled by humans and the perception of features were averaged
- For men:
  - Average attractiveness rating of 3.0
  - Average age of 29.1
- For women:
  - Average attractiveness rating of 3.4
  - Average age of 28.6



Gender Identification Model

```
Model: "sequential_7"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d_42 (Conv2D)          (None, 398, 398, 32)      896

 max_pooling2d_21 (MaxPoolin  (None, 199, 199, 32)     0
 g2D)

 conv2d_43 (Conv2D)          (None, 197, 197, 64)      18496

 max_pooling2d_22 (MaxPoolin  (None, 98, 98, 64)       0
 g2D)

 conv2d_44 (Conv2D)          (None, 96, 96, 128)       73856

 max_pooling2d_23 (MaxPoolin  (None, 48, 48, 128)      0
 g2D)

 flatten_7 (Flatten)         (None, 294912)            0

 dense_21 (Dense)            (None, 256)               75497728

 dense_22 (Dense)            (None, 1)                 257

...
Total params: 75,591,233
Trainable params: 75,591,233
Non-trainable params: 0
```

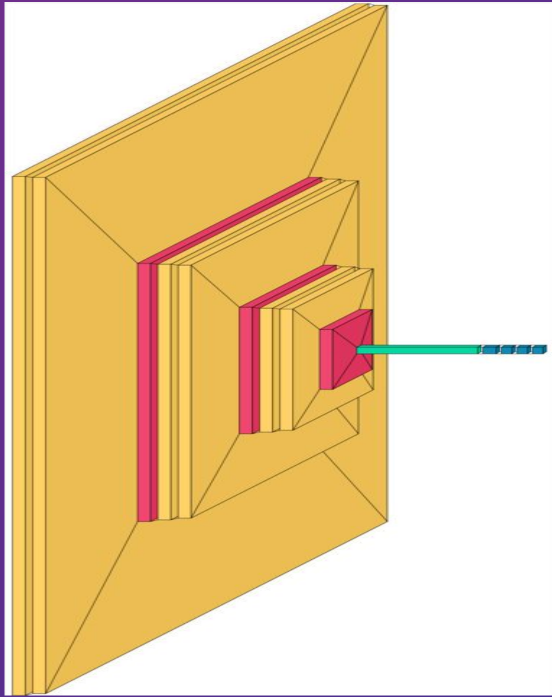


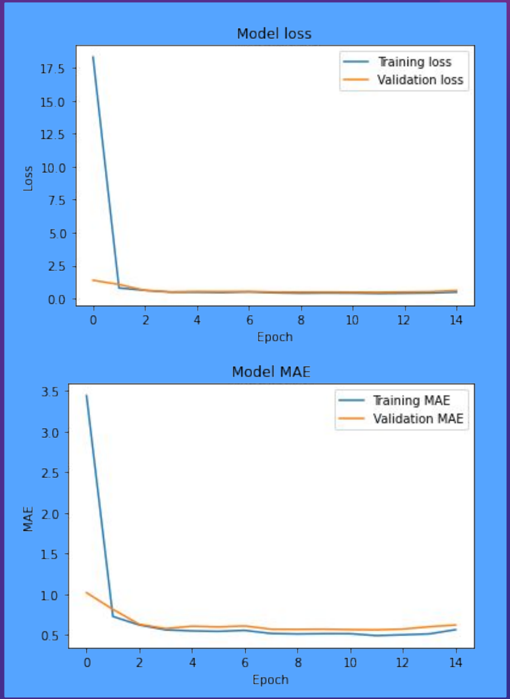



```
loss: 0.0472 - accuracy: 0.9853 - val_loss: 0.1779 - val_accuracy: 0.9250
```

Male Attractiveness Model

```
Model: "sequential_13"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d_75 (Conv2D)          (None, 398, 398, 32)      896

 conv2d_76 (Conv2D)          (None, 396, 396, 32)      9248

 max_pooling2d_39 (MaxPoolin  (None, 198, 198, 32)     0
 g2D)

 conv2d_77 (Conv2D)          (None, 196, 196, 64)      18496

 conv2d_78 (Conv2D)          (None, 194, 194, 64)      36928

 max_pooling2d_40 (MaxPoolin  (None, 97, 97, 64)       0
 g2D)

 conv2d_79 (Conv2D)          (None, 95, 95, 128)       73856

 conv2d_80 (Conv2D)          (None, 93, 93, 128)       147584

 max_pooling2d_41 (MaxPoolin  (None, 46, 46, 128)      0
 g2D)

...
Total params: 69,665,569
Trainable params: 69,665,569
Non-trainable params: 0
```

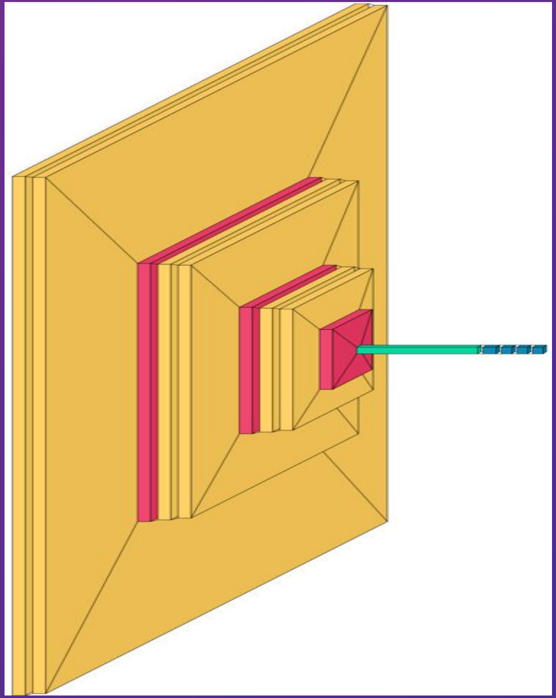


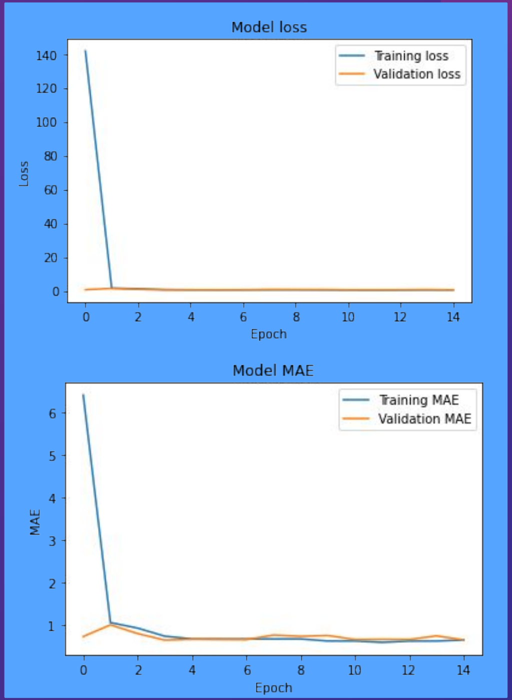



```
loss: 0.4779 - mae: 0.5629 - val_loss: 0.6079 - val_mae: 0.6205
```

Female Attractiveness Model

```
Model: "sequential_15"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d_87 (Conv2D)          (None, 398, 398, 32)      896

 conv2d_88 (Conv2D)          (None, 396, 396, 32)      9248

 max_pooling2d_45 (MaxPoolin  (None, 198, 198, 32)     0
 g2D)

 conv2d_89 (Conv2D)          (None, 196, 196, 64)      18496

 conv2d_90 (Conv2D)          (None, 194, 194, 64)      36928

 max_pooling2d_46 (MaxPoolin  (None, 97, 97, 64)       0
 g2D)

 conv2d_91 (Conv2D)          (None, 95, 95, 128)       73856

 conv2d_92 (Conv2D)          (None, 93, 93, 128)       147584

 max_pooling2d_47 (MaxPoolin  (None, 46, 46, 128)      0
 g2D)

...
Total params: 69,665,569
Trainable params: 69,665,569
Non-trainable params: 0
```



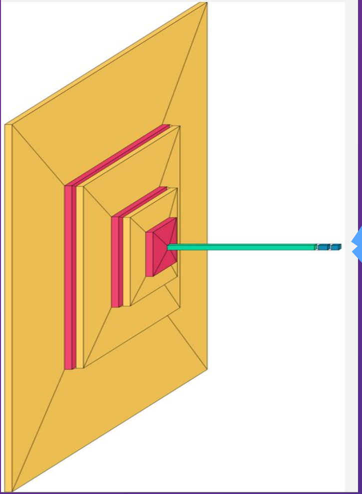



```
loss: 0.5973 - mae: 0.6365 - val_loss: 0.5979 - val_mae: 0.6364
```

Model Application

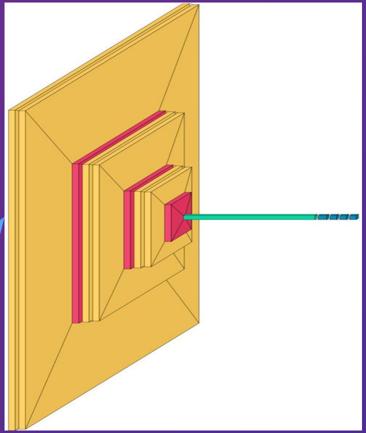
Unseen Image

Gender Prediction



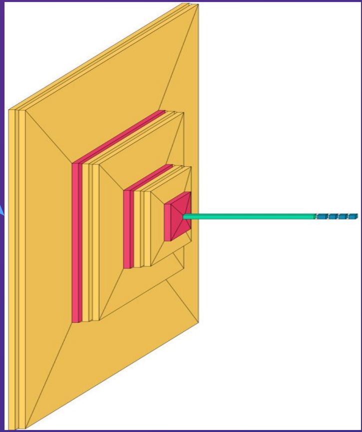
Probability Male: 1.0

Male Model

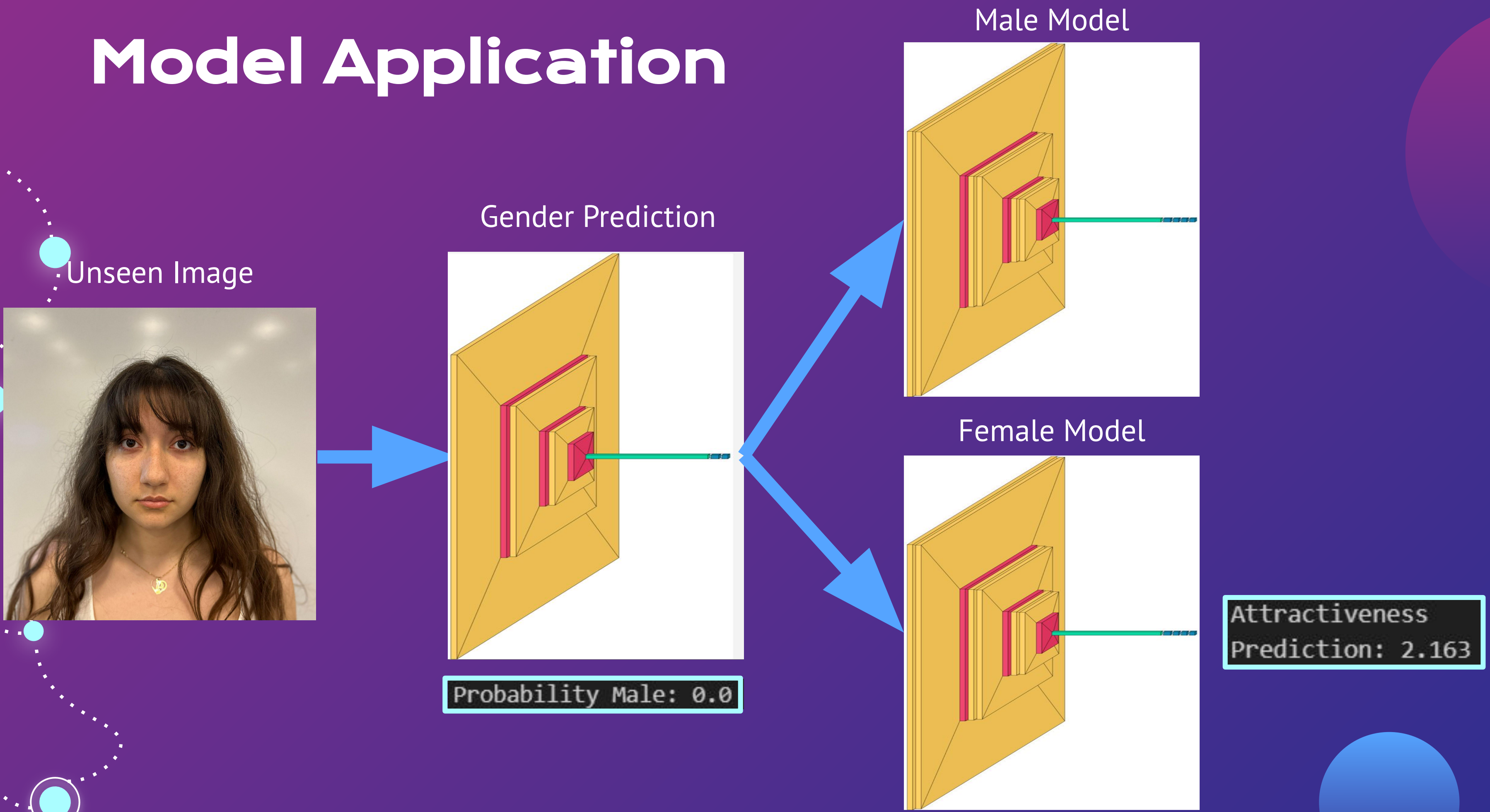


Attractiveness Prediction: 2.099

Female Model



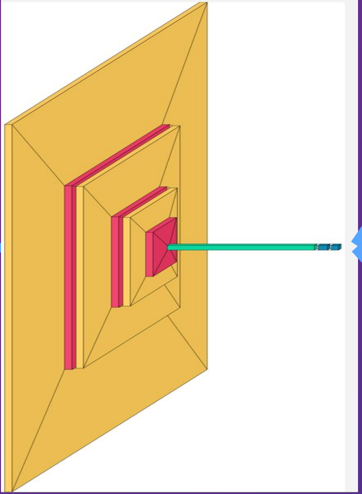
Model Application



Model Application

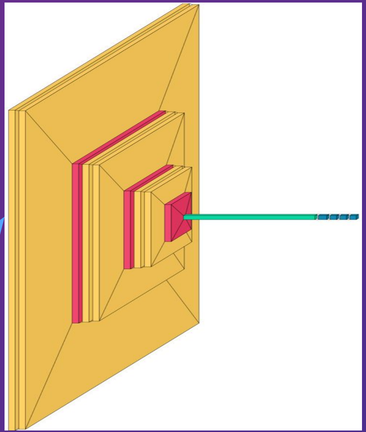
Unseen Image

Gender Prediction

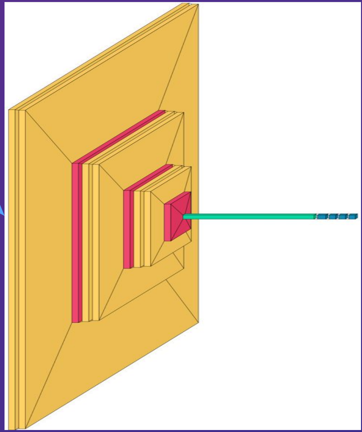


Probability Male: 0.07

Male Model



Female Model



Attractiveness Prediction: 2.468

Next Steps

- Fine tuning the model on the preferences of an individual
- Implement Grad-CAM to interpret model's feature detection
- Add more regularization layers to the model to decrease the over fitting of the model