

# Code documentation

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March 2024 / July 2024

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## Folders you can find in .rar file:

**Initial playground folder:** Contains scripts for evaluating the Face Gender Classification model trained on the Kaggle dataset on other datasets. You should be able to reproduce the results (those in the table) by simply running the notebooks. There is one script per dataset.

## FIRST RESULTS: ACCURACY IN VALIDATION PHASE

TRAINING DATASET	
	Kaggle Gender Classification Dataset
VALIDATION DATASET	Kaggle Gender Classification Dataset
	97.21%
	UTKFace Dataset
	89.74%
	All-Age-Faces Dataset mostly Asian
	70.40%
	Mix Kaggle Dataset (1/5) & All-Age-Faces Dataset mostly Asian
	78.31%
	Japanese Politicians Dataset
	49.89%

**Fine tuning playground folder:** Code is available to reproduce the following table, where the original model has been fine-tuned. Each script is used for fine-tuning with a different dataset, as indicated by the script's title.

## Fine-tune Face-Gender-Classification-PyTorch model: FairFace Dataset & Mixed Dataset (Kaggle & Asian Dataset)

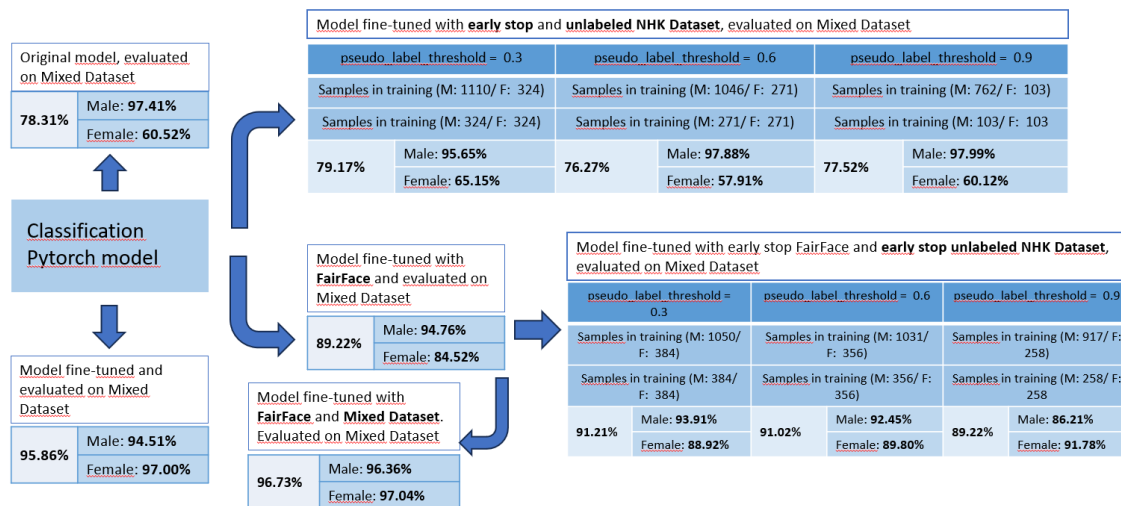
VALIDATION DATASET		Face-Gender-Classification-PyTorch model (trained with Kaggle Gender Classification Dataset)		Face-Gender-Classification-PyTorch model (trained with Kaggle Gender Classification Dataset & fine-tuned with FairFace Dataset)		Face-Gender-Classification-PyTorch model (trained with Kaggle Gender Classification Dataset & fine-tuned with FairFace Dataset & fine-tuned with Mixed Dataset )	
	Kaggle Gender Classification Dataset	97.21%	Male: 95.60% Female: 98.81%	96.10%	Male: 93.75% Female: 98.44%	97.34%	Male: 96.29% Female: 98.39%
	UTKFace Dataset	90.44%	Male: 95.44% Female: 84.79%	96.74%	Male: 97.38% Female: 96.02%	94.37%	Male: 96.61% Female: 91.86%
	All-Age-Faces Dataset mostly Asian	70.40%	Male: 97.93% Female: 48.46%	86.41%	Male: 95.36% Female: 79.28%	96.27%	Male: 96.19% Female: 96.33%
	Mix Kaggle Dataset (1/5) & All-Age-Faces Dataset mostly Asian	78.31%	Male: 97.41% Female: 60.52%	89.22%	Male: 94.76% Female: 84.52%	96.73%	Male: 96.36% Female: 97.04%
	Japanese Politicians Dataset	98.02%	Male: 99.43% Female: 68.65%	97.66%	Male: 98.25% Female: 83.58%	97.07%	Male: 97.63% Female: 83.58%

**Classification\_model.pth:** Provided with the original model (not modified).

**Get\_pth:** Scripts to get the .pth files after fine tuning.

**Pseudo labeling playground folder:** Code to reproduce the following table. However, I'm not sure if these scripts are the latest versions I used, so there might be small adjustments needed. You will need to experiment with the pseudo\_label\_threshold value.

### Results of Pytorch model evaluated on Mixed Dataset when using pseudo-labeling with NHK Dataset



**Evaluated with nhk folder:** The different models are evaluated on NHK data. I've also included the Grad-CAM code, which is very useful for understanding where the model is focusing.

**Clusters folder:** There's one subfolder for racial classification and another for gender classification. Both of them have scripts for evaluation on every dataset.

**I'm also attaching the .pth files for the following situations (so it's easier to reproduce the results):** When original model was fine tuned with mixed dataset for 5 epochs (5epoch\_mixed.pth), when original model was fine tuned for 5 epoch with FairFace dataset (5epoch\_fairface.pth) and when original model was fine-tuned with 5 epochs of mixed dataset and 5 epochs of FairFace dataset (5epoch\_fairface\_5epoch\_mixed.pth).

For domain adaptation I can't find the scripts I used, also it was at the very end and I couldn't spend a lot of time, so probably they were quite poor...

And I'm not attaching the code I used with inaFaceAnalyzer, but please let me know if you want me to share it. From the call of the other day, I understood you were not going in that direction.