2024 ISIC Skin Cancer Strategy Tracking

MetaData only. Catboost Xgboost ensemble:

1, UNOPTIMIZED HYPERPARAMETERS, NO UNDERSAMPLE, 5 KFOLD:

Catboost --- 0.1812080074970339

XGBoost --- 0.18520017161248398

LB – 0.172

2, UNOPTIMIZED HYPERPARAMETERS, NO UNDERSAMPLE, 5 KFOLD, 3Voting:

Catboost --- 0.18079529644211087

XGboost --- 0.1837197313292706

3, UNOPTIMIZED HYPERPARAMETERS, NO UNDERSAMPLE, 5 KFOLD, 3Voting, Normalised Training Data (Num Cols only):

CatBoost --- 0.1803024732268609

XGBoost --- 0.183588781421935

LB – 0.170

4, UNOPTIMIZED HYPERPARAMETERS, NO UNDERSAMPLE, 5 KFOLD, No Voting, Normalised:  
CatBoost --- 0.1783927673908946

XGBoost --- 0.18330894899686673

LB – 0.170

SVR with visual Embeddings seed = 42

CLS Embeddings, ViT x 1: (google/vit-base-patch16-224)

Overall CV score = 0.12056568751959282

Mean fold score = 0.12431527800374861

CLS Embeddings, ViTx2: (google/vit-base-patch16-224 + facebook/deit\_small)

Overall CV score = 0.12710854302903724

Mean fold score = 0.12978996345610738

LB – 0.136

#increasing the number of models used seems to increase model performance.

CLS Embeddings, ViTx2: (google/vit-base-patch16-224 + facebook/deit\_small) with test images resized to 224x224:

Overall CV score = 0.12757404087588564

Mean fold score = 0.12997003619391695

LB – 0.135

(Decrease LB score????)

CLS Embeddings, ViTx2: (google/vit-base-patch16-224 + facebook/deit\_small) data augmentation to up sample the positive class:

Overall CV score = 0.14743738888491112

Mean fold score = 0.14882905355390036

LB - 0.11 (Augmentation may not be a good idea)

CLS Embeddings, ViTx2: (google/vit-base-patch16-224 + facebook/deit\_small) milder augmentation to up sample:

Overall CV score = 0.1722288272977147

Mean fold score = 0.17229403685032604

LB – 0.106

With less samples (was one pos -> 5 augmented pos, now one pos -> 3 augmented pos):

LB – 0.116

**Augmentation during embedding extraction (SVRTrain) may be causing the SVR to overfit.**

CLS Embeddings, ViTx2: (google/vit-base-patch16-224 + facebook/deit\_small) milder augmentation + more negative samples in each fold (was 10% positive in each fold, now 5%:

Overall CV score = 0.17032714753853403

Mean fold score = 0.1708129534668663

1x ViT SVR (google/vit-base-patch16-224)

OG:

Overall CV score = 0.12056584311294717

Mean fold score = 0.12431546796666544

Finetuned (8 epochs on 2019 Data):

Overall CV score = 0.13054832723870985

Mean fold score = 0.13081712927744457

#Finetuning ViTs on external dataset will increase performance.

FINAL CV:  
(I still think using ViTs finetuned on 2024 data will introduce leakage)

With new VM do this

cat ~/.ssh/id\_rsa.pub

Conda init

source ~/.bashrc

conda activate

sudo apt-get install unzip

accelerate launch --config\_file 4gpus.yaml FineTuneAccelerateAmp.py