```python
# This Python 3 environment comes with many helpful analytics libraries installed
# It is defined by the kaggle/python Docker image: https://github.com/kaggle/docker-python
# For example, here's several helpful packages to load

import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)

# Input data files are available in the read-only "../input/" directory
# For example, running this (by clicking run or pressing Shift+Enter) will list all files under the input directory

import os
for dirname, _, filenames in os.walk('/kaggle/input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))

# You can write up to 20GB to the current directory (/kaggle/working/) that gets preserved as output when you create a version using "Save & I
# You can also write temporary files to /kaggle/temp/, but they won't be saved outside of the current session
```

```
/kaggle/input/fashionmnist/t10k-labels-idx1-ubyte
/kaggle/input/fashionmnist/t10k-images-idx3-ubyte
/kaggle/input/fashionmnist/fashion-mnist_test.csv
/kaggle/input/fashionmnist/fashion-mnist_train.csv
/kaggle/input/fashionmnist/train-labels-idx1-ubyte
/kaggle/input/fashionmnist/train-images-idx3-ubyte
```

```python
#importing libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from keras.models import Sequential
from keras.layers import Conv2D, Activation, MaxPool2D, Flatten, Dense, GlobalAveragePooling2D, Dropout
from sklearn.model_selection import KFold, train_test_split
from tensorflow.keras.utils import to_categorical
import tensorflow as tf
from tensorflow import keras
from kerastuner import RandomSearch
from kerastuner.engine.hyperparameters import HyperParameters
```

```python
#load train data
df = pd.read_csv('/kaggle/input/fashionmnist/fashion-mnist_train.csv')
df.head()
```

	label	pixel1	pixel2	pixel3	pixel4	pixel5	pixel6	pixel7	pixel8	pixel9	...	pixel775	pixel776	pixel777	pixel778	pixel779
0	2	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0
1	9	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0
2	6	0	0	0	0	0	0	0	5	0	...	0	0	0	30	43
3	0	0	0	0	1	2	0	0	0	0	...	3	0	0	0	0
4	3	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0

5 rows × 785 columns

```python
#print dimension of the data
df.shape
```

```
(60000, 785)
```

∨ preprocessing and visualization

```python
#check missing values
df.isna().sum().sort_values()
```

```
label       0
pixel517    0
pixel518    0
pixel519    0
pixel520    0
```

```
            ..
    pixel264   0
    pixel265   0
    pixel266   0
    pixel268   0
    pixel784   0
    Length: 785, dtype: int64
```

```
#check duplicated data
df.duplicated().any()
```

⮕ True

```
#display number of duplicated data
df.duplicated().sum()
```

⮕ 43

```
#drop duplicates
df = df.drop_duplicates()
df.shape
```

⮕ (59957, 785)

```
#display some data info
df.info()
```

⮕ <class 'pandas.core.frame.DataFrame'>
    Int64Index: 59957 entries, 0 to 59999
    Columns: 785 entries, label to pixel784
    dtypes: int64(785)
    memory usage: 359.5 MB

```
#display the type of data
df.dtypes.unique()
```

⮕ array([dtype('int64')], dtype=object)

```
#data describtion to know some statistical information about it
df.describe()
```

⮕

	label	pixel1	pixel2	pixel3	pixel4	pixel5	pixel6	pixel7	pixel8	p
count	59957.000000	59957.000000	59957.000000	59957.000000	59957.000000	59957.000000	59957.000000	59957.000000	59957.000000	59957.0(
mean	4.500409	0.000901	0.006154	0.035342	0.102006	0.248094	0.411762	0.805744	2.197325	5.6
std	2.872572	0.094723	0.271108	1.222756	2.453749	4.308444	5.838271	8.217037	14.090882	23.8
min	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0(
25%	2.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0(
50%	5.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0(
75%	7.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0(
max	9.000000	16.000000	36.000000	226.000000	164.000000	227.000000	230.000000	224.000000	255.000000	254.0(

8 rows × 785 columns

```
#plot correlation between columns
corr=df.corr()
corr.style.background_gradient(cmap='coolwarm')
```

	label	pixel1	pixel2	pixel3	pixel4	pixel5	pixel6	pixel7	pixel8	pixel9	pixel10	pixel11	pixel12	pixel13	pixel
label	1.000000	-0.000676	0.002942	-0.010453	-0.007119	-0.004629	-0.011058	-0.036828	-0.085385	-0.161761	-0.301587	-0.507995	-0.569218	-0.461972	-0.371
pixel1	-0.000676	1.000000	0.297899	0.067551	0.046607	0.026630	0.026172	0.012096	0.012225	0.009644	0.000056	-0.001536	-0.001703	-0.003406	-0.004
pixel2	0.002942	0.297899	1.000000	0.575033	0.138709	0.054353	0.033184	0.022766	0.017138	0.016821	0.010920	0.001104	-0.004765	-0.009051	-0.009
pixel3	-0.010453	0.067551	0.575033	1.000000	0.387468	0.118136	0.087300	0.060937	0.035942	0.029674	0.021493	0.013902	0.008735	-0.000249	-0.003
pixel4	-0.007119	0.046607	0.138709	0.387468	1.000000	0.573172	0.325683	0.242987	0.141033	0.085302	0.051147	0.024978	0.015852	0.008657	0.0056
pixel5	-0.004629	0.026630	0.054353	0.118136	0.573172	1.000000	0.692892	0.423635	0.230693	0.136391	0.075677	0.035616	0.020559	0.015814	0.0162
pixel6	-0.011058	0.026172	0.033184	0.087300	0.325683	0.692892	1.000000	0.655459	0.324748	0.181620	0.095664	0.045679	0.028909	0.020924	0.0207
pixel7	-0.036828	0.012096	0.022766	0.060937	0.242987	0.423635	0.655459	1.000000	0.636615	0.324932	0.161713	0.060007	0.029046	0.018908	0.0170
pixel8	-0.085385	0.012225	0.017138	0.035942	0.141033	0.230693	0.324748	0.636615	1.000000	0.665618	0.317476	0.108920	0.031307	0.007191	0.0039
pixel9	-0.161761	0.009644	0.016821	0.029674	0.085302	0.136391	0.181620	0.324932	0.665618	1.000000	0.627682	0.226297	0.077899	0.015395	0.0062
pixel10	-0.301587	0.000056	0.010920	0.021493	0.051147	0.075677	0.095664	0.161713	0.317476	0.627682	1.000000	0.588959	0.271935	0.131868	0.0960
pixel11	-0.507995	-0.001536	0.001104	0.013902	0.024978	0.035616	0.045679	0.060007	0.108920	0.226297	0.588959	1.000000	0.703323	0.397845	0.3274
pixel12	-0.569218	-0.001703	-0.004765	0.008735	0.015852	0.020559	0.028909	0.029046	0.031307	0.077899	0.271935	0.703323	1.000000	0.717671	0.5627
pixel13	-0.461972	-0.003406	-0.009051	-0.000249	0.008657	0.015814	0.020924	0.018908	0.007191	0.015395	0.131868	0.397845	0.717671	1.000000	0.8757
pixel14	-0.371126	-0.004325	-0.009799	-0.003643	0.005696	0.016219	0.020725	0.017065	0.003906	0.006265	0.096078	0.327483	0.562729	0.875792	1.0000
pixel15	-0.333282	-0.004088	-0.009812	-0.003400	0.006290	0.017737	0.021248	0.017968	0.004136	0.003341	0.091350	0.304434	0.534584	0.822558	0.9492
pixel16	-0.381659	-0.004536	-0.009117	-0.002603	0.005201	0.011675	0.016798	0.014382	0.001732	0.008142	0.113526	0.350053	0.601299	0.865092	0.9044
pixel17	-0.500049	-0.003627	-0.005704	0.003539	0.010298	0.013669	0.021459	0.020052	0.016081	0.049342	0.216056	0.536369	0.757924	0.775693	0.7042
pixel18	-0.537184	0.000364	0.000913	0.011283	0.019702	0.025953	0.033726	0.045295	0.071770	0.166108	0.434535	0.764818	0.756663	0.509470	0.4085
pixel19	-0.424438	0.000235	0.005715	0.015083	0.031084	0.043274	0.054561	0.096550	0.191479	0.370669	0.611065	0.695170	0.518933	0.309338	0.2612
pixel20	-0.208779	0.003828	0.011693	0.022864	0.057455	0.087239	0.115019	0.215741	0.426055	0.624549	0.590417	0.344481	0.185851	0.091523	0.0811
pixel21	-0.064849	0.009267	0.012383	0.028668	0.090056	0.151082	0.208773	0.394930	0.597611	0.563463	0.336231	0.118992	0.033691	0.002860	0.0128
pixel22	0.019548	0.009632	0.013173	0.035787	0.131376	0.227441	0.330876	0.498054	0.477389	0.299133	0.143847	0.039712	-0.000311	-0.007392	0.0082
pixel23	0.060004	0.013324	0.018453	0.046564	0.182902	0.323851	0.398625	0.355818	0.231970	0.123284	0.048254	-0.001614	-0.019892	-0.019734	-0.0008
pixel24	0.064342	0.010737	0.018645	0.063943	0.236693	0.355556	0.329005	0.240669	0.136037	0.070855	0.024724	-0.010725	-0.024522	-0.023138	-0.0078
pixel25	0.063207	0.014228	0.022278	0.086459	0.313831	0.331786	0.252655	0.177975	0.099060	0.050596	0.017973	-0.008699	-0.020037	-0.021309	-0.009
pixel26	0.052588	0.020924	0.023377	0.088028	0.235374	0.146441	0.131778	0.088334	0.048586	0.023852	0.005208	-0.011794	-0.018912	-0.020644	-0.013
pixel27	0.038049	0.033467	0.056002	0.026804	0.045771	0.040083	0.041493	0.018430	0.008225	0.000396	-0.006866	-0.014840	-0.019148	-0.020505	-0.016
pixel28	0.017512	0.068284	0.072982	0.023971	0.006048	0.003427	0.002290	0.000685	-0.000786	-0.002488	-0.005050	-0.007838	-0.009649	-0.010467	-0.009
pixel29	0.007421	0.174314	0.053172	0.011710	0.010717	0.006152	0.003298	0.003229	0.001445	0.000375	-0.003193	-0.005829	-0.007244	-0.008151	-0.008
pixel30	0.010253	0.069358	0.250093	0.109548	0.035055	0.026354	0.021286	0.013252	0.006077	0.003007	-0.001238	-0.005750	-0.008454	-0.010223	-0.010
pixel31	0.003536	0.035209	0.295473	0.492303	0.442037	0.184695	0.108066	0.071251	0.044249	0.033352	0.017121	0.001395	-0.005694	-0.010048	-0.010
pixel32	0.003868	0.019391	0.122012	0.257716	0.687574	0.590218	0.376448	0.246458	0.132942	0.082273	0.047006	0.016567	0.004004	-0.002513	-0.005
pixel33	0.006076	0.015974	0.062287	0.129913	0.430276	0.682276	0.626224	0.430501	0.253146	0.147748	0.076890	0.025148	0.003433	-0.004669	-0.005
pixel34	-0.042842	0.019273	0.038504	0.065555	0.216598	0.375898	0.534795	0.588778	0.529474	0.404214	0.227457	0.073683	0.012450	-0.011897	-0.016
pixel35	-0.152712	0.015517	0.030865	0.049393	0.124118	0.193004	0.263905	0.433143	0.592442	0.637349	0.490930	0.226932	0.079240	-0.001458	-0.020
pixel36	-0.263419	0.008715	0.023664	0.040324	0.082912	0.121576	0.161495	0.247487	0.452719	0.593234	0.589063	0.389368	0.198358	0.034591	-0.012
pixel37	-0.367285	0.007054	0.017500	0.033714	0.057454	0.077120	0.108916	0.153322	0.280050	0.500071	0.604481	0.501342	0.332673	0.097127	0.0187
pixel38	-0.496931	0.001937	0.010043	0.024643	0.040200	0.049417	0.075416	0.106218	0.177840	0.339177	0.593843	0.605764	0.483083	0.234845	0.1299
pixel39	-0.646996	0.001938	0.002519	0.014214	0.024820	0.028204	0.045742	0.065605	0.116523	0.220827	0.424183	0.693734	0.660424	0.438224	0.3393
pixel40	-0.674527	0.002629	-0.002745	0.008729	0.017522	0.018179	0.031039	0.041183	0.073107	0.152771	0.318172	0.551815	0.681315	0.615943	0.5183
pixel41	-0.635065	0.000750	-0.005841	0.004628	0.011675	0.015076	0.023647	0.024845	0.041249	0.099431	0.247616	0.468231	0.607038	0.670234	0.6249
pixel42	-0.620196	-0.001493	-0.007739	0.003321	0.011348	0.016315	0.024985	0.024458	0.033144	0.081186	0.222368	0.452091	0.605288	0.662034	0.6269
pixel43	-0.614649	-0.003432	-0.007036	0.003743	0.011738	0.016469	0.025347	0.025617	0.034161	0.082257	0.220641	0.443954	0.598690	0.659661	0.6112
pixel44	-0.610249	-0.003909	-0.006530	0.003971	0.010261	0.012319	0.022330	0.024278	0.034722	0.088510	0.230636	0.444214	0.590208	0.653083	0.6104
pixel45	-0.625908	-0.000560	-0.004653	0.006496	0.013389	0.011074	0.023290	0.030545	0.050926	0.115967	0.262705	0.469927	0.587312	0.606615	0.5661
pixel46	-0.620084	-0.002517	-0.000530	0.010719	0.020089	0.020053	0.034753	0.052553	0.095769	0.185593	0.353497	0.565886	0.594143	0.459091	0.3981
pixel47	-0.565278	-0.000089	0.004304	0.016192	0.028647	0.030536	0.048506	0.073091	0.129384	0.246302	0.432896	0.603862	0.557108	0.325755	0.2461
pixel48	-0.402709	0.005476	0.012942	0.026512	0.046053	0.057624	0.081208	0.117167	0.209117	0.365681	0.498797	0.490476	0.389186	0.158642	0.0737
pixel49	-0.252195	0.008219	0.018062	0.033207	0.065245	0.086745	0.120208	0.183866	0.318764	0.456798	0.484676	0.356567	0.225926	0.051545	-0.005
pixel50	-0.111058	0.008965	0.019129	0.036106	0.091179	0.130229	0.176937	0.274229	0.402997	0.459810	0.390748	0.208698	0.087474	-0.007291	-0.028
pixel51	0.034675	0.012135	0.018669	0.037239	0.119128	0.185074	0.249796	0.287990	0.314957	0.278723	0.180409	0.046735	-0.023438	-0.052946	-0.043
pixel52	0.110628	0.011960	0.014420	0.041166	0.150960	0.228198	0.253695	0.210815	0.150017	0.090497	0.030411	-0.029321	-0.057571	-0.063606	-0.046
pixel53	0.122325	0.011627	0.013213	0.052453	0.211950	0.245319	0.219923	0.155032	0.088503	0.043083	0.002068	-0.035549	-0.052848	-0.057141	-0.041
pixel54	0.106176	0.017787	0.013822	0.061340	0.189614	0.176703	0.164040	0.115229	0.069333	0.033112	0.001522	-0.027424	-0.041041	-0.044956	-0.035
pixel55	0.074795	0.033822	0.062673	0.039203	0.069071	0.083863	0.101825	0.047768	0.024611	0.006817	-0.009882	-0.025048	-0.032881	-0.036092	-0.030
pixel56	0.035693	0.052823	0.093578	0.028402	0.025049	0.022769	0.029024	0.010371	0.003279	-0.001430	-0.008025	-0.014369	-0.018056	-0.019849	-0.017
pixel57	0.011984	0.076879	0.023324	0.004879	0.003976	0.006350	0.005397	0.003493	0.000798	-0.000062	-0.003949	-0.007541	-0.009312	-0.010445	-0.010
pixel58	0.019057	0.028414	0.040089	0.049246	0.035503	0.034152	0.022180	0.010799	0.004236	0.001231	-0.004074	-0.010681	-0.014199	-0.016105	-0.015
pixel59	0.019490	0.017842	0.098231	0.165038	0.272347	0.195370	0.116637	0.070669	0.044261	0.030258	0.013100	-0.005200	-0.014807	-0.020114	-0.020
pixel60	0.015688	0.011906	0.108375	0.165895	0.397452	0.419322	0.325200	0.221827	0.131086	0.086206	0.046932	0.007396	-0.011274	-0.021100	-0.023
pixel61	-0.036052	0.018597	0.086859	0.114540	0.241540	0.367004	0.387017	0.356564	0.321947	0.266870	0.171423	0.055794	0.001942	-0.022009	-0.026
pixel62	-0.200420	0.011790	0.049303	0.068820	0.105536	0.163832	0.209447	0.258770	0.359105	0.436608	0.400033	0.256227	0.132127	0.016410	-0.015
pixel63	-0.326982	0.008725	0.028974	0.045094	0.071806	0.095265	0.131251	0.178392	0.261698	0.362057	0.411810	0.358321	0.263187	0.070568	0.0002
pixel64	-0.377859	0.006904	0.021827	0.036034	0.054474	0.074180	0.106156	0.148388	0.231464	0.315702	0.370786	0.353312	0.311288	0.108722	0.0139
pixel65	-0.423247	0.002945	0.014321	0.026568	0.042078	0.056084	0.080522	0.110694	0.188470	0.306119	0.391572	0.360853	0.364936	0.215812	0.1023
pixel66	-0.529522	0.001032	0.007302	0.015771	0.027652	0.035198	0.053850	0.074803	0.124930	0.225687	0.393833	0.451390	0.459689	0.415223	0.3173
pixel67	-0.629224	0.004995	0.002650	0.008100	0.015954	0.018680	0.030972	0.045051	0.077743	0.154053	0.281984	0.486645	0.553409	0.571617	0.5163

pixel67	-0.023224	0.004003	0.002030	0.008100	0.013934	0.018000	0.030972	0.043031	0.077743	0.154033	0.281984	0.488043	0.555409	0.571017	0.5185
pixel68	-0.618437	0.006905	0.001645	0.005793	0.013022	0.015475	0.025487	0.038558	0.071615	0.144239	0.263621	0.420330	0.507519	0.565979	0.5494
pixel69	-0.609191	0.006798	0.001024	0.004633	0.012980	0.018022	0.025605	0.034915	0.067837	0.135821	0.249476	0.407539	0.493647	0.534538	0.5188
pixel70	-0.605378	0.006156	-0.000877	0.003974	0.013092	0.018400	0.025527	0.034232	0.061122	0.120199	0.233752	0.397283	0.493788	0.548987	0.5010
pixel71	-0.592179	0.003390	-0.001816	0.003160	0.011241	0.017161	0.024763	0.033738	0.058729	0.118294	0.226741	0.386316	0.485388	0.550039	0.5015
pixel72	-0.580121	0.005921	0.000829	0.004754	0.012572	0.017232	0.025254	0.034114	0.064140	0.128356	0.234066	0.382147	0.469333	0.528334	0.5009
pixel73	-0.562201	0.011878	0.003601	0.005561	0.013328	0.014991	0.024678	0.034879	0.066071	0.132688	0.241454	0.389168	0.466061	0.517178	0.5019
pixel74	-0.549526	0.002397	0.001004	0.006092	0.014497	0.016237	0.026292	0.038805	0.069448	0.138073	0.249688	0.403590	0.478177	0.520015	0.4985
pixel75	-0.534282	-0.002229	0.001183	0.009187	0.017730	0.020849	0.034050	0.048110	0.084660	0.157326	0.278762	0.426627	0.483546	0.462244	0.4195
pixel76	-0.415769	0.001078	0.008520	0.019093	0.032538	0.039528	0.060812	0.084183	0.140083	0.230613	0.321561	0.351889	0.364329	0.266227	0.1897
pixel77	-0.314646	0.004247	0.015864	0.029065	0.044819	0.057813	0.082725	0.116178	0.181366	0.264232	0.314970	0.292666	0.264828	0.100057	0.0137
pixel78	-0.254515	0.006463	0.020214	0.036141	0.056929	0.071751	0.099928	0.137596	0.206014	0.282812	0.314140	0.271106	0.212147	0.038154	-0.032₈
pixel79	-0.132291	0.008020	0.021751	0.038714	0.071432	0.097271	0.127224	0.155650	0.228314	0.284982	0.272929	0.182651	0.112174	-0.006847	-0.049₆
pixel80	0.070204	0.010678	0.024545	0.035774	0.097487	0.142755	0.159966	0.152984	0.161276	0.152671	0.105681	0.014036	-0.043231	-0.082552	-0.083₆
pixel81	0.161622	0.009156	0.015670	0.034133	0.125518	0.153104	0.148967	0.111222	0.074703	0.037447	-0.005605	-0.059650	-0.087299	-0.098538	-0.086₉
pixel82	0.158231	0.010832	0.019584	0.037153	0.119610	0.130705	0.124719	0.086595	0.049933	0.016620	-0.016914	-0.052810	-0.071026	-0.078415	-0.070₁
pixel83	0.115691	0.018467	0.038595	0.033650	0.057230	0.058147	0.068020	0.038694	0.017523	0.000464	-0.019097	-0.041101	-0.052725	-0.058178	-0.055₁
pixel84	0.067166	0.038024	0.053187	0.024530	0.018065	0.016597	0.034917	0.014722	0.000430	-0.004600	-0.015524	-0.026682	-0.032976	-0.036362	-0.035₁
pixel85	0.023791	0.042327	0.014979	0.008669	0.006016	0.005661	0.002786	0.000511	-0.001532	-0.003788	-0.008179	-0.013533	-0.016716	-0.018476	-0.018₂
pixel86	0.031225	0.016112	0.050996	0.070481	0.072529	0.050406	0.029792	0.014169	0.009524	0.006246	-0.004686	-0.016578	-0.022697	-0.025560	-0.025₃
pixel87	0.032566	0.012260	0.105905	0.167379	0.221116	0.166213	0.113698	0.068796	0.049050	0.037469	0.014208	-0.015144	-0.028700	-0.036085	-0.036₉
pixel88	0.012985	0.010304	0.086154	0.120487	0.271555	0.304709	0.256593	0.207708	0.160083	0.124483	0.074447	0.009233	-0.020934	-0.035672	-0.038₂
pixel89	-0.134167	0.015946	0.059988	0.083831	0.154184	0.223919	0.233993	0.238571	0.273565	0.302148	0.261720	0.158336	0.073879	-0.003586	-0.023₅
pixel90	-0.304100	0.006489	0.034782	0.061739	0.084989	0.109599	0.148319	0.175307	0.234656	0.312232	0.336872	0.291009	0.228717	0.062408	0.0000
pixel91	-0.358943	0.009068	0.027127	0.045433	0.064696	0.080881	0.111931	0.150360	0.201490	0.258531	0.285100	0.262856	0.285400	0.159542	0.0639
pixel92	-0.360110	0.003287	0.018135	0.031399	0.045063	0.058867	0.085548	0.124254	0.195617	0.258686	0.275330	0.231239	0.282098	0.274214	0.1799
pixel93	-0.401590	0.002858	0.013017	0.023888	0.034634	0.041773	0.064153	0.091455	0.157113	0.253254	0.321690	0.256639	0.306760	0.359492	0.2814
pixel94	-0.535918	0.007517	0.010278	0.017358	0.023564	0.027750	0.045211	0.061794	0.106599	0.188441	0.340645	0.415831	0.422035	0.489084	0.4414
pixel95	-0.629578	0.005756	0.006179	0.012157	0.015624	0.017843	0.030532	0.040203	0.069426	0.136436	0.258378	0.466778	0.535024	0.566090	0.5427
pixel96	-0.619982	0.004350	0.005115	0.012069	0.014667	0.018706	0.032051	0.039979	0.066673	0.132725	0.252120	0.420080	0.520773	0.553491	0.5299
pixel97	-0.605880	0.003611	0.004528	0.011231	0.014815	0.021313	0.032361	0.039866	0.065187	0.125347	0.240727	0.406355	0.503999	0.557244	0.5241
pixel98	-0.592133	0.003060	0.002733	0.010515	0.014443	0.022857	0.032488	0.039179	0.062423	0.119942	0.231578	0.398859	0.497537	0.559310	0.5242
pixel99	-0.571697	0.004989	0.002645	0.008728	0.012327	0.021628	0.030276	0.037770	0.061652	0.117668	0.223224	0.385588	0.484371	0.546202	0.5110
pixel100	-0.547252	0.003615	0.003523	0.009014	0.013718	0.018944	0.027211	0.035631	0.060883	0.118190	0.223324	0.375430	0.467277	0.526902	0.4992
pixel101	-0.532225	0.003662	0.005818	0.010143	0.013164	0.017261	0.027388	0.035505	0.060468	0.119598	0.228284	0.381545	0.465582	0.511424	0.4891
pixel102	-0.525483	0.004782	0.005729	0.011557	0.014415	0.015742	0.027265	0.035461	0.061340	0.121608	0.231625	0.389690	0.463998	0.500191	0.4783
pixel103	-0.502877	0.005821	0.006640	0.012026	0.015328	0.016069	0.030043	0.040746	0.073648	0.135455	0.243830	0.381247	0.446150	0.484112	0.4625
pixel104	-0.383845	0.000462	0.009810	0.018714	0.025545	0.028426	0.046636	0.068260	0.113098	0.185045	0.254525	0.274202	0.325883	0.373145	0.3346
pixel105	-0.262974	0.000934	0.014525	0.026583	0.035338	0.042566	0.064433	0.093690	0.145655	0.204885	0.222666	0.169667	0.211121	0.234523	0.1742
pixel106	-0.228761	0.003630	0.021508	0.035546	0.047788	0.059190	0.085537	0.116735	0.160370	0.205632	0.209324	0.162161	0.172568	0.120108	0.0524
pixel107	-0.182849	0.007056	0.025750	0.044962	0.066052	0.079919	0.105036	0.123907	0.167761	0.214273	0.218792	0.171914	0.139904	0.013043	-0.049₁
pixel108	-0.010210	0.008567	0.030634	0.051971	0.082613	0.105647	0.120111	0.118869	0.142110	0.161631	0.134721	0.062657	0.016305	-0.068703	-0.097₈
pixel109	0.173594	0.008247	0.029301	0.045180	0.096925	0.117364	0.121205	0.100678	0.079178	0.051804	0.008139	-0.060963	-0.101270	-0.124999	-0.120₉
pixel110	0.203935	0.006559	0.027204	0.044109	0.099614	0.109591	0.101486	0.070835	0.039680	0.008596	-0.028764	-0.076207	-0.101665	-0.113171	-0.106₇
pixel111	0.157168	0.013106	0.051675	0.053974	0.054297	0.049836	0.055963	0.029010	0.011735	-0.007172	-0.031165	-0.059432	-0.075643	-0.083650	-0.080₄
pixel112	0.097839	0.022061	0.078254	0.086024	0.050004	0.023241	0.021456	0.004471	-0.002186	-0.009246	-0.022756	-0.038637	-0.047665	-0.052445	-0.051₀
pixel113	0.039348	0.028222	0.068517	0.093426	0.021789	0.002482	0.000984	-0.000678	-0.002695	-0.005382	-0.012722	-0.020686	-0.025554	-0.028076	-0.027₆
pixel114	0.056656	0.017823	0.089765	0.088035	0.060462	0.040733	0.028213	0.011631	0.007152	0.002929	-0.012906	-0.031311	-0.039868	-0.043893	-0.043₅
pixel115	0.058320	0.008570	0.076492	0.103707	0.149617	0.129727	0.096267	0.067338	0.049523	0.034497	0.004892	-0.028866	-0.044904	-0.053678	-0.053₈
pixel116	-0.001027	0.012331	0.080318	0.089767	0.177613	0.212338	0.200332	0.176967	0.159031	0.145721	0.102360	0.028058	-0.019063	-0.047698	-0.052₂
pixel117	-0.198757	0.012176	0.047341	0.074659	0.114987	0.157150	0.174519	0.180838	0.219801	0.264997	0.257972	0.199450	0.131116	0.014494	-0.023₁
pixel118	-0.325878	0.007029	0.028496	0.050840	0.073253	0.091191	0.123840	0.150677	0.192358	0.255025	0.275354	0.243218	0.253544	0.128821	0.0475
pixel119	-0.330064	0.006654	0.020415	0.035007	0.051981	0.067347	0.091296	0.119309	0.164173	0.211432	0.223958	0.185789	0.251163	0.269680	0.1857
pixel120	-0.346886	0.003038	0.013738	0.025532	0.036833	0.049415	0.073801	0.103636	0.157420	0.216364	0.231632	0.191406	0.255967	0.327757	0.2669
pixel121	-0.406702	0.007356	0.011791	0.020655	0.028947	0.035001	0.056451	0.085064	0.139366	0.222888	0.295317	0.236087	0.294410	0.368224	0.3193
pixel122	-0.549907	0.006714	0.008936	0.015595	0.019832	0.024787	0.044596	0.059301	0.103068	0.175669	0.314366	0.416089	0.427553	0.485146	0.4533
pixel123	-0.617874	0.005414	0.004753	0.010115	0.013601	0.016290	0.032424	0.041763	0.074427	0.136336	0.246532	0.441151	0.518497	0.541672	0.5216
pixel124	-0.608013	0.005376	0.004231	0.009921	0.012705	0.018601	0.034346	0.041952	0.069489	0.134463	0.245790	0.407338	0.500981	0.528933	0.5050
pixel125	-0.601218	0.005098	0.003812	0.009635	0.012951	0.021158	0.034558	0.040912	0.066382	0.126785	0.239649	0.402023	0.491867	0.529862	0.4951
pixel126	-0.586710	0.003890	0.002354	0.009222	0.011941	0.020422	0.034820	0.039149	0.061834	0.120479	0.232640	0.399395	0.491556	0.530883	0.4897
pixel127	-0.559937	0.003307	0.001518	0.008031	0.011046	0.018959	0.033061	0.037610	0.060771	0.117394	0.225298	0.392219	0.480723	0.511340	0.4708
pixel128	-0.520220	0.002455	0.003624	0.008213	0.010949	0.017007	0.029510	0.036765	0.058549	0.112835	0.216406	0.370237	0.453452	0.489707	0.4562
pixel129	-0.486838	0.003276	0.007134	0.008607	0.009985	0.012955	0.027388	0.034666	0.058272	0.111421	0.210328	0.356920	0.434047	0.469100	0.4464
pixel130	-0.472412	0.004540	0.006873	0.008620	0.010757	0.013210	0.027938	0.034468	0.062541	0.116737	0.211268	0.357315	0.426824	0.455522	0.4358
pixel131	-0.455924	0.005629	0.005077	0.008822	0.011700	0.013044	0.027641	0.039160	0.069936	0.125642	0.221158	0.351524	0.413826	0.443706	0.4259
pixel132	-0.354103	0.005118	0.008523	0.014351	0.019235	0.023294	0.042322	0.060625	0.095606	0.156937	0.223541	0.253990	0.309277	0.359588	0.3379
pixel133	-0.223205	0.000747	0.010838	0.020350	0.027862	0.034194	0.056242	0.076822	0.117577	0.167681	0.181456	0.126380	0.181752	0.247548	0.2116
pixel134	-0.172800	0.000969	0.013947	0.027256	0.037754	0.044804	0.068607	0.089364	0.123263	0.158421	0.149806	0.089425	0.134842	0.187245	0.1412
pixel135	-0.144583	0.004612	0.020967	0.035185	0.054300	0.064180	0.085836	0.102103	0.135232	0.170536	0.162535	0.103901	0.104106	0.065454	0.0110

pixel136	-0.030627	0.009061	0.025999	0.045674	0.068331	0.086162	0.099926	0.101305	0.119096	0.143542	0.123960	0.062214	0.027690	-0.069000	-0.111!
pixel137	0.177103	0.007670	0.029363	0.038220	0.071914	0.089579	0.098072	0.082323	0.068034	0.050426	0.010648	-0.061058	-0.105214	-0.148437	-0.154!
pixel138	0.251934	0.005134	0.028464	0.030910	0.072472	0.085895	0.084376	0.058221	0.029590	-0.001170	-0.043480	-0.101846	-0.135630	-0.152298	-0.147:
pixel139	0.212145	0.010286	0.042511	0.036236	0.037663	0.041395	0.044924	0.020575	0.003368	-0.016911	-0.046799	-0.083995	-0.105423	-0.116353	-0.113
pixel140	0.130941	0.018339	0.032731	0.049122	0.031082	0.017245	0.014185	0.001354	-0.005204	-0.016721	-0.033189	-0.053779	-0.066133	-0.072340	-0.070!
pixel141	0.055528	0.020928	0.046474	0.068413	0.016609	0.002483	0.004461	-0.001317	-0.004552	-0.006205	-0.017122	-0.028500	-0.035237	-0.038689	-0.038
pixel142	0.083869	0.011505	0.061669	0.035914	0.049696	0.041506	0.023726	0.015413	0.009405	-0.001873	-0.021395	-0.042791	-0.054407	-0.060155	-0.059!
pixel143	0.084898	0.004357	0.059727	0.075125	0.114551	0.114186	0.095725	0.078999	0.057611	0.039187	0.004340	-0.040994	-0.064188	-0.074910	-0.074!
pixel144	-0.011311	0.014715	0.062629	0.070391	0.122203	0.150949	0.151715	0.141306	0.139929	0.141480	0.112580	0.042228	-0.013132	-0.060292	-0.069!
pixel145	-0.218410	0.011770	0.038007	0.065899	0.093899	0.123517	0.142302	0.153574	0.187431	0.230201	0.230347	0.188311	0.150888	0.028750	-0.020:
pixel146	-0.307332	0.004615	0.022022	0.041775	0.064553	0.079174	0.104649	0.127698	0.159631	0.214757	0.228163	0.194599	0.239731	0.184687	0.1007
pixel147	-0.311115	0.004551	0.016042	0.028428	0.045466	0.059738	0.078580	0.101229	0.140465	0.181357	0.189616	0.154035	0.228812	0.288616	0.2265
pixel148	-0.342282	0.008444	0.014969	0.023528	0.031723	0.045967	0.066670	0.092854	0.145052	0.201639	0.209624	0.170206	0.249255	0.328424	0.2819
pixel149	-0.400202	0.005182	0.010343	0.019100	0.026678	0.032307	0.052176	0.076426	0.126547	0.206126	0.280069	0.216460	0.278526	0.366913	0.3314
pixel150	-0.540251	0.005742	0.008521	0.014719	0.019032	0.022256	0.039891	0.057764	0.097112	0.161135	0.290119	0.404396	0.421284	0.480238	0.4573
pixel151	-0.595019	0.003954	0.005194	0.010503	0.013862	0.017216	0.032513	0.045537	0.080802	0.135598	0.239551	0.421296	0.495824	0.518792	0.5014
pixel152	-0.589435	0.002921	0.003244	0.009944	0.012958	0.020043	0.034835	0.044593	0.077645	0.137043	0.238723	0.394643	0.483405	0.505595	0.4823
pixel153	-0.590706	0.002946	0.003196	0.007583	0.012073	0.022014	0.034786	0.042759	0.072434	0.130473	0.236028	0.396129	0.482334	0.507127	0.4687
pixel154	-0.571625	0.002790	0.002048	0.007058	0.010078	0.018774	0.031624	0.038302	0.065211	0.121378	0.229964	0.394231	0.478257	0.507224	0.4657
pixel155	-0.532806	0.003030	0.002720	0.007055	0.010302	0.017103	0.029894	0.036265	0.060107	0.115460	0.217933	0.383779	0.464211	0.488882	0.4487
pixel156	-0.479764	0.001770	0.005499	0.008416	0.009774	0.017942	0.028549	0.035636	0.059566	0.110269	0.206500	0.359915	0.433079	0.454526	0.4205
pixel157	-0.427188	0.001427	0.007561	0.006827	0.007570	0.012398	0.025669	0.032346	0.059783	0.105972	0.194828	0.335634	0.403678	0.423644	0.4006
pixel158	-0.396676	0.000853	0.006971	0.007193	0.008557	0.010278	0.024750	0.033196	0.062504	0.107634	0.190632	0.325250	0.385280	0.406525	0.3884
pixel159	-0.378773	0.003182	0.010455	0.007950	0.009332	0.008796	0.022756	0.036411	0.064278	0.112537	0.195997	0.313257	0.368985	0.398700	0.3834
pixel160	-0.289800	0.003160	0.012720	0.013716	0.016634	0.020222	0.035812	0.048219	0.081754	0.135539	0.193844	0.218320	0.272934	0.329453	0.3176
pixel161	-0.162741	0.004404	0.016672	0.019633	0.024020	0.027657	0.046047	0.062899	0.101107	0.145602	0.150312	0.085754	0.143892	0.218495	0.1973
pixel162	-0.115924	-0.000618	0.015277	0.022844	0.030024	0.036650	0.056664	0.074256	0.101285	0.131350	0.116387	0.051748	0.106488	0.172352	0.1399
pixel163	-0.080539	0.001431	0.020287	0.028541	0.044793	0.054132	0.070981	0.083952	0.108727	0.133133	0.115533	0.048326	0.069524	0.083325	0.0382
pixel164	0.005632	0.005347	0.024423	0.039716	0.057146	0.069411	0.081572	0.084701	0.099451	0.118937	0.095023	0.028093	0.002310	-0.071567	-0.1154
pixel165	0.200738	0.007270	0.028292	0.035756	0.055385	0.064866	0.074371	0.066150	0.057838	0.045657	0.002286	-0.074764	-0.120074	-0.179108	-0.193
pixel166	0.306940	0.003533	0.026082	0.025639	0.057687	0.068875	0.065871	0.045214	0.018640	-0.012359	-0.060172	-0.131044	-0.174041	-0.197705	-0.194
pixel167	0.271633	0.003897	0.017366	0.021924	0.033377	0.035448	0.033587	0.017610	-0.002531	-0.026524	-0.063510	-0.111257	-0.139841	-0.154078	-0.150
pixel168	0.163520	0.009358	0.016668	0.026688	0.022654	0.010896	0.007097	0.000577	-0.006970	-0.020461	-0.041306	-0.067662	-0.083271	-0.091177	-0.089
pixel169	0.073355	0.022394	0.017567	0.020486	0.004449	0.004985	0.004748	-0.002322	-0.005881	-0.009607	-0.021694	-0.036446	-0.045480	-0.050039	-0.049!
pixel170	0.107127	0.004649	0.035450	0.031272	0.041323	0.037587	0.020198	0.014308	0.003536	-0.006772	-0.027674	-0.053661	-0.068895	-0.076114	-0.0750
pixel171	0.103696	0.006410	0.039435	0.056682	0.097209	0.102174	0.087581	0.072792	0.053062	0.035085	0.001661	-0.049368	-0.079219	-0.093475	-0.092!
pixel172	-0.020259	0.015114	0.051582	0.066031	0.094137	0.117748	0.118714	0.115445	0.126413	0.130198	0.110351	0.051800	0.001192	-0.062378	-0.079
pixel173	-0.211026	0.010208	0.034475	0.062610	0.086185	0.101224	0.118124	0.128770	0.160020	0.198864	0.201230	0.167928	0.157216	0.046362	-0.010(
pixel174	-0.277885	0.003166	0.022236	0.039711	0.060512	0.072159	0.089647	0.108480	0.135247	0.182241	0.189484	0.156094	0.216235	0.203003	0.1268
pixel175	-0.294169	0.006046	0.016170	0.030065	0.044664	0.059170	0.073101	0.090935	0.127725	0.163498	0.165770	0.130164	0.214578	0.289868	0.2387
pixel176	-0.325747	0.008128	0.013490	0.023171	0.032367	0.046447	0.063065	0.087346	0.137404	0.189798	0.191561	0.146902	0.228956	0.320210	0.2818
pixel177	-0.377209	0.004525	0.009188	0.018901	0.026874	0.033665	0.053145	0.073441	0.119672	0.194064	0.264178	0.199231	0.255805	0.349591	0.3232
pixel178	-0.513654	0.005268	0.007743	0.013884	0.019732	0.025295	0.043186	0.060560	0.094190	0.152149	0.266649	0.379194	0.402309	0.464131	0.4474
pixel179	-0.561434	0.003609	0.004189	0.009380	0.014978	0.021045	0.036268	0.051379	0.083918	0.132760	0.229608	0.399723	0.466253	0.492840	0.4815
pixel180	-0.561629	0.003084	0.001529	0.008929	0.014197	0.023538	0.039202	0.051265	0.081658	0.132810	0.229020	0.380967	0.462861	0.480419	0.4553
pixel181	-0.565084	0.003083	0.002478	0.008501	0.013964	0.025130	0.038817	0.049393	0.076950	0.127417	0.226610	0.381495	0.464805	0.488033	0.4464
pixel182	-0.541061	0.002735	0.000971	0.007288	0.011614	0.021397	0.034067	0.042393	0.068261	0.118496	0.218867	0.378363	0.458536	0.485144	0.4430
pixel183	-0.492821	0.002525	0.001679	0.005990	0.011457	0.019860	0.030850	0.038019	0.061441	0.108311	0.204633	0.362694	0.439614	0.460486	0.4207
pixel184	-0.430424	0.001058	0.004916	0.006471	0.010773	0.018183	0.029451	0.036677	0.057401	0.098233	0.187988	0.341968	0.408151	0.421583	0.3842
pixel185	-0.353650	0.001037	0.006284	0.004990	0.006257	0.014938	0.027352	0.035533	0.056940	0.093601	0.172654	0.303864	0.362593	0.375906	0.3494
pixel186	-0.299676	0.001764	0.004256	0.005772	0.007709	0.010543	0.024999	0.033086	0.054263	0.093027	0.162801	0.281428	0.329246	0.345665	0.3299
pixel187	-0.278393	0.002733	0.007907	0.006187	0.008778	0.009057	0.024573	0.034348	0.054786	0.095487	0.160934	0.258282	0.305425	0.337593	0.3267
pixel188	-0.200002	0.002119	0.010683	0.011457	0.016090	0.018630	0.033085	0.043187	0.069603	0.117286	0.162710	0.170534	0.216931	0.273906	0.2676
pixel189	-0.081726	0.004974	0.014605	0.017585	0.022820	0.026709	0.041017	0.054722	0.088712	0.127055	0.118548	0.038682	0.091855	0.173796	0.1622
pixel190	-0.047913	0.000484	0.015579	0.020521	0.026764	0.032074	0.048317	0.062179	0.085404	0.109000	0.082956	0.009360	0.065138	0.139049	0.1154
pixel191	-0.010344	0.000508	0.018581	0.026145	0.042363	0.048584	0.059543	0.068222	0.084860	0.101983	0.076300	0.001384	0.031705	0.067379	0.0297
pixel192	0.068695	0.003382	0.024623	0.036519	0.051917	0.060844	0.067830	0.068222	0.080399	0.094292	0.062401	-0.013181	-0.032549	-0.082490	-0.123:
pixel193	0.237537	0.006900	0.027828	0.036044	0.047879	0.055417	0.063789	0.052583	0.044625	0.033818	-0.012349	-0.091392	-0.137331	-0.204244	-0.223!
pixel194	0.361245	0.006595	0.021029	0.023342	0.044477	0.054222	0.048570	0.031070	0.005679	-0.026580	-0.078989	-0.157801	-0.206382	-0.238052	-0.236:
pixel195	0.315258	0.004633	0.012903	0.017741	0.028762	0.033198	0.035347	0.016598	-0.007975	-0.037722	-0.079158	-0.134489	-0.169648	-0.187362	-0.183;
pixel196	0.183977	0.007132	0.008528	0.009103	0.011301	0.006878	0.008136	0.003167	-0.010401	-0.023426	-0.047878	-0.078557	-0.097318	-0.106655	-0.104!
pixel197	0.090417	0.017450	0.011277	0.011554	0.001637	0.003345	0.002184	-0.000328	-0.005645	-0.013536	-0.027780	-0.045900	-0.056712	-0.062221	-0.061!
pixel198	0.128486	0.003485	0.045211	0.042095	0.033980	0.034798	0.022908	0.015354	0.000239	-0.012305	-0.034931	-0.065448	-0.083659	-0.092236	-0.090!
pixel199	0.118044	0.013596	0.029522	0.031370	0.077241	0.092710	0.074205	0.060568	0.041455	0.026403	-0.002274	-0.053320	-0.087167	-0.107266	-0.107
pixel200	-0.028238	0.013594	0.049166	0.068304	0.080571	0.100728	0.101901	0.102232	0.110359	0.117438	0.103242	0.058325	0.017070	-0.058514	-0.0820
pixel201	-0.191892	0.007090	0.030834	0.054009	0.075630	0.089110	0.102746	0.113400	0.140344	0.175346	0.174203	0.142849	0.153267	0.062329	0.0021
pixel202	-0.247893	0.002584	0.019422	0.035359	0.056697	0.067260	0.080117	0.096874	0.120410	0.158845	0.160058	0.125766	0.195647	0.212316	0.1454
pixel203	-0.278806	0.009825	0.014787	0.028837	0.043937	0.054627	0.069071	0.085212	0.120265	0.151450	0.148773	0.111142	0.200100	0.285009	0.2420
pixel204	-0.308733	0.007870	0.011091	0.020243	0.031875	0.042442	0.058640	0.079623	0.130311	0.181031	0.180322	0.128137	0.211083	0.309875	0.2755

pixel205	-0.354130	0.004828	0.007970	0.017248	0.027700	0.035333	0.051551	0.066608	0.113070	0.184674	0.246523	0.181585	0.238566	0.336478	0.3144
pixel206	-0.481751	0.006550	0.005642	0.012434	0.019955	0.027411	0.043014	0.057125	0.090846	0.146468	0.248203	0.345052	0.378242	0.446755	0.4362
pixel207	-0.531292	0.003858	0.002321	0.008227	0.015675	0.022938	0.036592	0.049110	0.082434	0.131194	0.224813	0.382967	0.442901	0.471610	0.4658
pixel208	-0.538710	0.003879	0.000903	0.008150	0.014684	0.024929	0.039027	0.047871	0.079090	0.129078	0.221834	0.366824	0.447086	0.460657	0.4318
pixel209	-0.543268	0.002844	0.001374	0.006094	0.012327	0.022195	0.035627	0.046283	0.075687	0.123434	0.219353	0.367531	0.446359	0.467532	0.4249
pixel210	-0.507493	0.002562	-0.000320	0.005113	0.009642	0.021503	0.033107	0.039998	0.068419	0.114648	0.203365	0.353001	0.431289	0.453757	0.4142
pixel211	-0.438836	0.001488	0.000965	0.004167	0.010176	0.020217	0.029932	0.036706	0.061887	0.105998	0.193451	0.318539	0.392080	0.410506	0.3708
pixel212	-0.384129	0.001036	0.003053	0.002975	0.007832	0.015822	0.024359	0.028964	0.050376	0.086711	0.171858	0.324227	0.382592	0.389179	0.3512
pixel213	-0.286526	-0.000435	0.001699	0.002751	0.005517	0.013016	0.021937	0.026275	0.046063	0.078589	0.146944	0.269108	0.324032	0.330393	0.3009
pixel214	-0.210077	0.001825	0.001552	0.002273	0.006510	0.009486	0.020199	0.024116	0.042688	0.076305	0.134009	0.237501	0.279140	0.289410	0.2740
pixel215	-0.175039	0.002581	0.004669	0.003330	0.008154	0.008229	0.020997	0.027940	0.047117	0.079934	0.125345	0.198033	0.237906	0.275325	0.2731
pixel216	-0.102101	0.001790	0.006982	0.007538	0.014262	0.014224	0.027988	0.034197	0.058526	0.101907	0.130996	0.112101	0.149357	0.209667	0.2086
pixel217	-0.000695	0.003741	0.010745	0.013274	0.022206	0.022905	0.034466	0.047035	0.076666	0.110827	0.092384	-0.003777	0.041491	0.123688	0.1155
pixel218	0.018559	0.003283	0.012506	0.016547	0.025389	0.028467	0.042269	0.053269	0.074655	0.091832	0.057109	-0.029510	0.024656	0.103908	0.0862
pixel219	0.056610	-0.000254	0.014829	0.022158	0.038528	0.042215	0.052313	0.055429	0.067171	0.077487	0.042809	-0.039939	-0.004614	0.043890	0.0131
pixel220	0.139136	0.002238	0.020522	0.028968	0.044232	0.050975	0.056983	0.054898	0.060494	0.068383	0.028832	-0.053540	-0.066603	-0.097796	-0.1348
pixel221	0.287173	0.005838	0.022085	0.030757	0.040785	0.045969	0.052529	0.042027	0.030138	0.016296	-0.033263	-0.114500	-0.160671	-0.230890	-0.2527
pixel222	0.406671	0.008897	0.015915	0.020488	0.037103	0.045454	0.038089	0.020884	-0.006451	-0.041001	-0.097936	-0.181498	-0.233270	-0.273766	-0.2747
pixel223	0.339448	0.005213	0.010321	0.012750	0.023289	0.027733	0.026203	0.009054	-0.016407	-0.047157	-0.093528	-0.157138	-0.197213	-0.217818	-0.2132
pixel224	0.188742	0.004742	0.001787	-0.002084	0.008185	0.008835	0.009398	0.003696	-0.011079	-0.028923	-0.054914	-0.088458	-0.109257	-0.119750	-0.1173
pixel225	0.105808	0.008599	0.011468	0.014124	0.001701	-0.002507	-0.002522	-0.005821	-0.013157	-0.021498	-0.035438	-0.054289	-0.066309	-0.072492	-0.0715
pixel226	0.149542	0.006343	0.041134	0.035120	0.025498	0.031823	0.019766	0.009038	-0.007670	-0.021578	-0.044161	-0.076221	-0.095782	-0.105722	-0.1037
pixel227	0.121191	0.015903	0.034469	0.032161	0.060471	0.080847	0.067002	0.051593	0.036309	0.018669	-0.009741	-0.053663	-0.084592	-0.111360	-0.1137
pixel228	-0.028572	0.007514	0.041483	0.066031	0.071797	0.086017	0.086364	0.081027	0.089919	0.098069	0.083376	0.050361	0.023584	-0.053800	-0.081
pixel229	-0.164422	0.005676	0.026264	0.047739	0.065565	0.078588	0.091303	0.099720	0.123589	0.152894	0.145604	0.116613	0.143998	0.074950	0.0165
pixel230	-0.216158	0.002342	0.017927	0.032983	0.048639	0.058065	0.067226	0.081861	0.102600	0.137201	0.132379	0.098279	0.177688	0.220208	0.1642
pixel231	-0.259000	0.010737	0.014220	0.027294	0.039884	0.044299	0.058081	0.076222	0.113081	0.141637	0.133931	0.094080	0.186831	0.278721	0.2450
pixel232	-0.291550	0.006606	0.009356	0.018368	0.030036	0.036816	0.049943	0.067103	0.117215	0.167187	0.165652	0.110799	0.199328	0.304859	0.2742
pixel233	-0.332866	0.004281	0.006135	0.014647	0.027398	0.033002	0.049295	0.060658	0.104876	0.171642	0.224096	0.161807	0.221803	0.330108	0.3139
pixel234	-0.452902	0.006536	0.003985	0.010689	0.020563	0.028461	0.043267	0.057965	0.091969	0.146020	0.238105	0.314447	0.353391	0.426900	0.4245
pixel235	-0.508688	0.003885	0.000741	0.008110	0.015012	0.023315	0.036401	0.048966	0.082827	0.131356	0.222658	0.375805	0.427696	0.453941	0.4521
pixel236	-0.524824	0.003594	-0.000466	0.007048	0.013486	0.024882	0.038563	0.048103	0.079834	0.130186	0.218847	0.356403	0.434324	0.446807	0.4170
pixel237	-0.525993	0.003296	-0.000397	0.005916	0.013884	0.024179	0.035872	0.045327	0.075351	0.123091	0.214420	0.359609	0.431637	0.451408	0.4117
pixel238	-0.467338	0.002453	-0.001110	0.003642	0.008896	0.022544	0.033619	0.040545	0.067452	0.109475	0.182510	0.317608	0.399996	0.420347	0.3832
pixel239	-0.342236	0.002965	0.002273	0.004845	0.010140	0.020705	0.032380	0.039064	0.064903	0.108928	0.179408	0.235427	0.297427	0.326565	0.2876
pixel240	-0.330039	0.000317	0.001056	0.000424	0.004118	0.012062	0.020719	0.023557	0.042002	0.074993	0.156349	0.304765	0.347406	0.349070	0.3124
pixel241	-0.217303	-0.000037	-0.000452	0.000081	0.003163	0.006988	0.017430	0.021034	0.037835	0.064405	0.122893	0.232310	0.278668	0.276910	0.2478
pixel242	-0.130433	0.001867	0.000904	0.000311	0.004012	0.008667	0.018901	0.019922	0.035457	0.061345	0.107578	0.196111	0.225708	0.228502	0.2164
pixel243	-0.093439	0.002560	0.004283	0.001929	0.007029	0.009244	0.020821	0.024366	0.041536	0.068494	0.098069	0.151583	0.181458	0.218926	0.2252
pixel244	-0.014207	0.002409	0.007454	0.007246	0.012267	0.013742	0.026332	0.029314	0.049766	0.088344	0.100376	0.053806	0.086162	0.152450	0.1578
pixel245	0.068300	0.002815	0.010522	0.012019	0.017349	0.018085	0.028024	0.034263	0.060587	0.090985	0.064691	-0.045135	-0.003017	0.083777	0.0781
pixel246	0.083507	0.003351	0.012715	0.014804	0.022066	0.023075	0.035825	0.042581	0.060786	0.071308	0.028325	-0.068713	-0.015778	0.065513	0.0520
pixel247	0.131542	-0.001206	0.013262	0.020326	0.032413	0.033580	0.040655	0.042945	0.050474	0.051868	0.004701	-0.085999	-0.048146	0.010694	-0.0115
pixel248	0.215803	0.000969	0.018824	0.025968	0.037478	0.042034	0.044231	0.039671	0.040561	0.039977	-0.010067	-0.100277	-0.108446	-0.122441	-0.153
pixel249	0.346457	0.004175	0.019194	0.028312	0.035827	0.036228	0.039578	0.027669	0.014864	-0.003132	-0.062053	-0.150998	-0.197447	-0.264110	-0.284
pixel250	0.446686	0.004437	0.011553	0.017859	0.026798	0.031299	0.026151	0.008080	-0.019148	-0.055504	-0.119768	-0.208386	-0.262071	-0.308228	-0.310
pixel251	0.354379	0.005093	0.008609	0.012648	0.020448	0.021848	0.017932	-0.000317	-0.027697	-0.059486	-0.110055	-0.178817	-0.221334	-0.245645	-0.240
pixel252	0.191249	0.003506	0.000790	-0.004693	0.006557	0.006244	0.005848	-0.000789	-0.014407	-0.034670	-0.063194	-0.100813	-0.124073	-0.135961	-0.132
pixel253	0.121769	0.003147	0.009211	0.011638	-0.000872	-0.004476	-0.004974	-0.004213	-0.014991	-0.023563	-0.038782	-0.059744	-0.072540	-0.079527	-0.0779
pixel254	0.170034	0.011796	0.036878	0.033902	0.025999	0.031132	0.022346	0.009475	-0.007047	-0.024714	-0.049834	-0.085677	-0.106417	-0.115853	-0.1128
pixel255	0.126603	0.011530	0.033915	0.033683	0.052499	0.074519	0.066022	0.047572	0.028691	0.009262	-0.017986	-0.055559	-0.083924	-0.113211	-0.1149
pixel256	-0.012470	0.003897	0.036336	0.061098	0.068725	0.079143	0.079595	0.071823	0.075850	0.076384	0.057517	0.029997	0.017709	-0.051280	-0.0764
pixel257	-0.126517	0.004534	0.024587	0.044706	0.061858	0.072239	0.084389	0.089993	0.108132	0.130310	0.117586	0.088318	0.125574	0.078914	0.0273
pixel258	-0.179581	0.002901	0.018032	0.032716	0.045697	0.054004	0.062149	0.072834	0.087905	0.113338	0.101419	0.070106	0.157082	0.221386	0.1782
pixel259	-0.231127	0.009462	0.014020	0.026423	0.035553	0.040837	0.053533	0.069520	0.104178	0.128253	0.115786	0.076504	0.172064	0.270575	0.2475
pixel260	-0.264179	0.005503	0.009783	0.019058	0.028371	0.032935	0.043247	0.057315	0.101195	0.144742	0.138192	0.087735	0.186547	0.301711	0.2765
pixel261	-0.305445	0.002939	0.007031	0.015981	0.028328	0.035563	0.049139	0.059031	0.098949	0.156857	0.193663	0.134733	0.202182	0.326744	0.3193
pixel262	-0.426088	0.004400	0.004401	0.012178	0.021508	0.031542	0.045192	0.058104	0.093312	0.147953	0.230780	0.282237	0.327663	0.406537	0.4115
pixel263	-0.494671	0.004933	0.002676	0.008242	0.017625	0.026561	0.038786	0.050308	0.082462	0.129237	0.217325	0.369822	0.417427	0.441685	0.4407
pixel264	-0.507990	0.003064	-0.000443	0.005831	0.014351	0.025230	0.037444	0.048521	0.077130	0.123771	0.208512	0.342142	0.421103	0.435159	0.4059
pixel265	-0.500097	0.003228	-0.002411	0.005038	0.012704	0.023618	0.034519	0.043528	0.069453	0.115296	0.204060	0.348327	0.416203	0.434515	0.3991
pixel266	-0.406386	0.002210	-0.002028	0.002901	0.008686	0.019421	0.030414	0.038472	0.062545	0.098811	0.152431	0.266059	0.349267	0.368434	0.3372
pixel267	-0.199712	0.001789	0.001011	0.003057	0.009687	0.019622	0.030381	0.036936	0.062176	0.098724	0.140870	0.127237	0.167818	0.207780	0.1743
pixel268	-0.233032	-0.001143	-0.001285	-0.002199	0.001952	0.006124	0.013632	0.014291	0.026514	0.052564	0.122464	0.256335	0.280603	0.276544	0.2425
pixel269	-0.125885	0.000703	-0.001713	-0.002840	-0.002253	-0.000630	0.009283	0.013357	0.021443	0.037655	0.079493	0.175699	0.212065	0.200885	0.1730
pixel270	-0.051880	0.001866	0.000084	-0.002702	0.002601	0.006227	0.014551	0.014054	0.021938	0.042524	0.075843	0.147900	0.166451	0.160461	0.1507
pixel271	-0.026384	-0.001892	0.002050	0.000018	0.005097	0.006446	0.017238	0.018808	0.032411	0.055681	0.074564	0.110507	0.130530	0.164498	0.1778
pixel272	0.056260	0.000484	0.005576	0.005194	0.013077	0.015022	0.025199	0.027144	0.042572	0.071765	0.065183	-0.005249	0.029402	0.109690	0.1225
pixel273	0.120644	0.002181	0.008806	0.009877	0.016823	0.014903	0.022558	0.025736	0.047865	0.068039	0.028988	-0.087104	-0.040183	0.059875	0.0605

pixel274	0.136283	0.003115	0.011271	0.012629	0.017456	0.016712	0.028507	0.031257	0.046521	0.048614	-0.004350	-0.105619	-0.051326	0.035472	0.0298
pixel275	0.192499	-0.000308	0.012647	0.018630	0.027130	0.028143	0.034754	0.032325	0.032916	0.026769	-0.031616	-0.128008	-0.086242	-0.017277	-0.028
pixel276	0.280928	-0.000347	0.015747	0.023388	0.031147	0.035498	0.038128	0.029285	0.025290	0.014789	-0.047637	-0.145252	-0.149142	-0.145950	-0.167
pixel277	0.406328	0.000165	0.014956	0.025008	0.030280	0.029301	0.033558	0.017658	-0.001605	-0.028384	-0.098262	-0.196204	-0.243503	-0.302802	-0.316
pixel278	0.497611	0.001389	0.010074	0.016614	0.020885	0.022180	0.019137	-0.000716	-0.032740	-0.076486	-0.150019	-0.247806	-0.305942	-0.353919	-0.353
pixel279	0.381336	0.004261	0.005267	0.008433	0.014967	0.016927	0.011599	-0.006583	-0.037056	-0.073619	-0.131052	-0.207251	-0.253365	-0.280108	-0.273
pixel280	0.200577	0.003737	-0.001095	-0.005559	0.005583	0.006235	0.006611	-0.002389	-0.019701	-0.042212	-0.074682	-0.117458	-0.142963	-0.156034	-0.152
pixel281	0.134197	0.003659	0.019917	0.027596	0.002472	-0.004484	-0.005823	-0.006949	-0.015949	-0.024779	-0.041326	-0.064576	-0.078910	-0.086251	-0.084
pixel282	0.187479	0.014071	0.037285	0.037570	0.024106	0.031325	0.024244	0.009338	-0.007917	-0.027560	-0.056128	-0.094512	-0.116385	-0.125474	-0.120
pixel283	0.156619	0.010353	0.026446	0.026703	0.043209	0.064661	0.062218	0.046727	0.026509	0.004923	-0.027554	-0.074515	-0.103295	-0.124198	-0.120
pixel284	0.049925	0.004939	0.029258	0.048207	0.059467	0.069244	0.075636	0.072692	0.074530	0.068438	0.038808	-0.006948	-0.022402	-0.066740	-0.078
pixel285	-0.060052	0.002437	0.022913	0.037524	0.054671	0.066556	0.077669	0.084843	0.098366	0.111421	0.092971	0.053578	0.091233	0.076022	0.0395
pixel286	-0.126675	0.001722	0.015241	0.028031	0.039249	0.048647	0.058821	0.069281	0.076878	0.090364	0.070770	0.036206	0.126512	0.217745	0.1916
pixel287	-0.179767	0.007972	0.013122	0.023300	0.031437	0.036887	0.050080	0.064749	0.093880	0.110590	0.091494	0.048729	0.143236	0.256625	0.2483
pixel288	-0.213699	0.006693	0.010115	0.017798	0.028674	0.032372	0.041698	0.054506	0.089516	0.123100	0.109032	0.057767	0.158849	0.290194	0.2788
pixel289	-0.273210	0.001060	0.005546	0.015227	0.028029	0.036215	0.048713	0.059206	0.094664	0.144587	0.164991	0.106990	0.178820	0.316011	0.3204
pixel290	-0.393757	0.001830	0.004147	0.012173	0.022488	0.032798	0.044443	0.059278	0.095004	0.149042	0.224331	0.250151	0.298348	0.381875	0.3941
pixel291	-0.480890	0.005444	0.002328	0.008268	0.018505	0.025342	0.035861	0.047782	0.078417	0.123210	0.208876	0.362629	0.410026	0.434101	0.4316
pixel292	-0.481095	0.003830	-0.000969	0.005458	0.014038	0.025056	0.035979	0.044529	0.070898	0.113475	0.190807	0.320261	0.398062	0.415200	0.3888
pixel293	-0.448830	0.001980	-0.002897	0.002989	0.010584	0.022237	0.031753	0.036710	0.057432	0.098217	0.180858	0.320153	0.382334	0.396341	0.3668
pixel294	-0.284983	0.001884	-0.002730	0.000918	0.006992	0.017713	0.026717	0.031842	0.050202	0.077241	0.106682	0.177190	0.250596	0.271958	0.2470
pixel295	-0.036977	0.001700	-0.000492	-0.000401	0.005163	0.014963	0.025343	0.029901	0.049131	0.076160	0.085259	0.013027	0.035745	0.078993	0.0534
pixel296	-0.137411	-0.000165	-0.004582	-0.006051	-0.003768	0.002938	0.009543	0.006844	0.012842	0.033588	0.094560	0.209564	0.218142	0.209910	0.1805
pixel297	-0.070820	-0.000488	-0.004826	-0.005319	-0.006268	-0.002059	0.005031	0.004853	0.010145	0.020066	0.053710	0.147713	0.178352	0.162921	0.1395
pixel298	-0.003989	0.001711	-0.002070	-0.003967	-0.000610	0.001548	0.008155	0.005692	0.009448	0.023762	0.050288	0.117403	0.133266	0.125070	0.1182
pixel299	0.038349	-0.004048	0.000001	-0.001028	0.003553	0.002558	0.011887	0.013958	0.025381	0.042501	0.049147	0.067201	0.079301	0.111861	0.1314
pixel300	0.127058	-0.002692	0.003106	0.004211	0.012426	0.010104	0.020433	0.021884	0.034922	0.057860	0.030118	-0.068775	-0.036534	0.052923	0.0745
pixel301	0.180255	0.002010	0.007779	0.007545	0.014467	0.010249	0.016270	0.018485	0.032296	0.040433	-0.012073	-0.134841	-0.085849	0.029689	0.0412
pixel302	0.199726	0.003058	0.009495	0.009206	0.013423	0.012325	0.023128	0.023438	0.031669	0.023341	-0.037728	-0.147089	-0.096582	0.003517	0.0105
pixel303	0.257429	-0.001588	0.007690	0.013560	0.019697	0.019886	0.028439	0.023615	0.017674	0.000647	-0.068244	-0.173892	-0.132104	-0.047801	-0.045
pixel304	0.355010	-0.002778	0.010549	0.015618	0.024592	0.027137	0.029166	0.020911	0.009219	-0.012637	-0.086751	-0.197057	-0.202110	-0.176879	-0.185
pixel305	0.483437	-0.000209	0.010985	0.016152	0.022667	0.021436	0.025952	0.009866	-0.013672	-0.049166	-0.132620	-0.252318	-0.308441	-0.353057	-0.355
pixel306	0.561854	0.000396	0.005627	0.008624	0.012234	0.013052	0.010199	-0.010376	-0.045543	-0.095052	-0.180290	-0.296279	-0.365397	-0.408826	-0.400
pixel307	0.428321	0.002998	0.000253	0.001835	0.005673	0.007875	0.003500	-0.015484	-0.048113	-0.088855	-0.155569	-0.244310	-0.298464	-0.326453	-0.315
pixel308	0.207928	0.003397	-0.002019	-0.006113	0.003104	0.005225	0.004679	-0.005843	-0.024868	-0.049726	-0.085938	-0.133827	-0.163049	-0.176501	-0.170
pixel309	0.146110	0.006357	0.020881	0.029241	0.004102	-0.000630	-0.003714	-0.006682	-0.016278	-0.026459	-0.045710	-0.071944	-0.087791	-0.095832	-0.093
pixel310	0.205389	0.008511	0.026249	0.022826	0.020214	0.032735	0.024059	0.010380	-0.008616	-0.029875	-0.061409	-0.101659	-0.125039	-0.134902	-0.128
pixel311	0.190680	0.006954	0.024519	0.020963	0.036885	0.063243	0.062255	0.046355	0.026269	0.001998	-0.038941	-0.094808	-0.127386	-0.141285	-0.128
pixel312	0.126508	0.006151	0.023358	0.037557	0.053146	0.069386	0.078659	0.074814	0.079084	0.071873	0.026742	-0.042443	-0.069598	-0.094528	-0.089
pixel313	0.027852	0.002798	0.018340	0.030240	0.049398	0.065696	0.076522	0.080998	0.092677	0.104591	0.077120	0.018874	0.046989	0.058191	0.0410
pixel314	-0.047216	0.002771	0.011951	0.018971	0.033691	0.047170	0.056037	0.063876	0.071313	0.078796	0.048545	-0.001621	0.080058	0.199827	0.1957
pixel315	-0.101196	0.005942	0.012935	0.016409	0.029509	0.033736	0.046340	0.058916	0.084687	0.097663	0.071162	0.012530	0.097347	0.233011	0.2447
pixel316	-0.144067	0.008770	0.010458	0.015722	0.026670	0.029662	0.038113	0.048686	0.078085	0.103093	0.082617	0.023475	0.117167	0.266532	0.2758
pixel317	-0.234439	0.000492	0.004978	0.016900	0.029117	0.034528	0.046305	0.056712	0.088900	0.133921	0.140654	0.080383	0.151321	0.292180	0.3111
pixel318	-0.352672	0.002038	0.003277	0.011762	0.024194	0.031446	0.042313	0.055822	0.093000	0.145559	0.217226	0.218176	0.262517	0.343628	0.3620
pixel319	-0.447916	0.004406	0.000163	0.006583	0.012995	0.022639	0.031637	0.039138	0.067064	0.108076	0.190941	0.339602	0.380526	0.397947	0.3930
pixel320	-0.417881	0.002315	-0.003700	0.003560	0.009383	0.019988	0.028813	0.033909	0.055479	0.091547	0.157106	0.273830	0.340655	0.358815	0.3400
pixel321	-0.352739	0.001707	-0.005339	0.001295	0.008086	0.016203	0.022528	0.022254	0.039339	0.072732	0.142687	0.263383	0.313753	0.322072	0.3014
pixel322	-0.148788	0.002403	-0.000371	0.001254	0.005465	0.014410	0.022162	0.021378	0.037406	0.055251	0.062219	0.087527	0.143382	0.171691	0.1562
pixel323	0.069732	0.003254	0.000741	0.001638	0.005014	0.015718	0.026491	0.025301	0.043007	0.062623	0.046999	-0.056798	-0.040505	0.008820	-0.005
pixel324	-0.078713	-0.000184	-0.004652	-0.006835	-0.004482	0.002491	0.007694	0.002625	0.009243	0.029686	0.088256	0.183624	0.180485	0.175853	0.1563
pixel325	-0.039425	-0.000996	-0.005755	-0.005903	-0.004805	-0.001922	0.002686	-0.000212	0.006109	0.014828	0.045778	0.136349	0.161037	0.148551	0.1349
pixel326	0.029412	0.001456	-0.003049	-0.004065	-0.002573	-0.002654	0.003687	-0.001289	0.001761	0.013862	0.036458	0.096581	0.109490	0.103747	0.1024
pixel327	0.099091	-0.003283	-0.001298	-0.001245	0.004002	-0.000908	0.006238	0.005595	0.016311	0.029335	0.029829	0.036016	0.039352	0.063345	0.0856
pixel328	0.217938	-0.004256	0.002187	0.005223	0.011456	0.007093	0.015600	0.015761	0.026435	0.043244	-0.005885	-0.137491	-0.117186	-0.025766	0.0068
pixel329	0.275875	0.003201	0.005978	0.006882	0.012144	0.004985	0.009656	0.008801	0.014060	0.009441	-0.060027	-0.200316	-0.157849	-0.029892	-0.002
pixel330	0.309483	0.002713	0.007086	0.004236	0.010528	0.007863	0.016855	0.015108	0.015500	-0.003674	-0.081541	-0.213744	-0.177169	-0.056813	-0.030
pixel331	0.365201	-0.001552	0.006477	0.008089	0.014390	0.014561	0.023246	0.015607	0.005413	-0.020960	-0.106979	-0.238450	-0.211396	-0.107674	-0.084
pixel332	0.459873	-0.003110	0.008342	0.008806	0.016178	0.020055	0.022007	0.010289	-0.005302	-0.034022	-0.122560	-0.258276	-0.277540	-0.230885	-0.220
pixel333	0.571132	-0.000466	0.007599	0.008726	0.015160	0.016859	0.020459	0.003518	-0.021455	-0.060820	-0.159304	-0.304024	-0.376932	-0.407055	-0.393
pixel334	0.615325	-0.000253	0.004540	0.002311	0.005774	0.009154	0.006717	-0.015038	-0.052160	-0.106288	-0.201854	-0.332534	-0.413104	-0.451987	-0.433
pixel335	0.477347	0.001161	-0.001433	-0.002215	0.000438	0.002317	-0.002916	-0.023445	-0.058306	-0.103222	-0.177561	-0.277760	-0.340212	-0.370062	-0.356
pixel336	0.228491	0.003583	-0.001684	-0.006538	0.003412	0.007321	0.004665	-0.007973	-0.029333	-0.056542	-0.096697	-0.149996	-0.182767	-0.197809	-0.189
pixel337	0.163039	0.011837	0.015469	0.020427	0.001937	-0.001818	-0.005031	-0.009005	-0.020168	-0.032041	-0.052638	-0.081410	-0.099390	-0.108015	-0.105
pixel338	0.219560	0.011264	0.021885	0.016736	0.016373	0.029160	0.019399	0.008520	-0.012693	-0.034029	-0.067487	-0.109762	-0.134566	-0.144581	-0.136
pixel339	0.213320	0.010070	0.023673	0.017383	0.034423	0.067609	0.064161	0.044643	0.022354	-0.002587	-0.046541	-0.105186	-0.138157	-0.149140	-0.129
pixel340	0.174539	0.004234	0.018983	0.031568	0.046741	0.067383	0.078207	0.074764	0.079297	0.070532	0.023285	-0.052609	-0.088788	-0.110127	-0.093
pixel341	0.086647	0.001897	0.016797	0.025891	0.045061	0.063330	0.072077	0.075553	0.086747	0.097758	0.067855	0.003547	0.024207	0.044510	0.0423
pixel342	0.020197	0.003213	0.009505	0.013197	0.027636	0.045656	0.053319	0.060464	0.067698	0.071283	0.032953	-0.026421	0.042117	0.171397	0.1872

pixel343	-0.022084	0.007604	0.011503	0.010376	0.024610	0.033206	0.043357	0.054974	0.075840	0.082936	0.049741	-0.019183	0.050033	0.192707	0.2232
pixel344	-0.067716	0.009565	0.009742	0.013738	0.023539	0.027353	0.035930	0.044109	0.066042	0.079252	0.051972	-0.013609	0.067879	0.220321	0.2496
pixel345	-0.173570	-0.001222	0.003732	0.016296	0.026235	0.031859	0.044047	0.053983	0.082406	0.120487	0.110091	0.037799	0.100693	0.236686	0.2701
pixel346	-0.280587	0.000555	0.000742	0.009543	0.020162	0.026315	0.036339	0.047912	0.081825	0.130101	0.192985	0.164241	0.196475	0.265922	0.2881
pixel347	-0.380731	0.003720	-0.003089	0.004278	0.011226	0.017788	0.025086	0.028440	0.049233	0.082836	0.155402	0.287574	0.319528	0.330747	0.3259
pixel348	-0.340908	0.001269	-0.006637	0.000969	0.006746	0.014729	0.022392	0.024207	0.039886	0.068940	0.122572	0.227404	0.284769	0.303017	0.2951
pixel349	-0.274452	0.001103	-0.006060	-0.000520	0.004570	0.010651	0.017180	0.015535	0.029159	0.059683	0.119475	0.223301	0.267747	0.276548	0.2677
pixel350	-0.041844	0.001298	-0.001590	-0.000036	0.004062	0.013703	0.017698	0.016292	0.028411	0.038492	0.031985	0.030505	0.072402	0.108664	0.1051
pixel351	0.150119	0.002380	-0.000184	0.000940	0.004342	0.013661	0.020064	0.020950	0.034125	0.043981	0.013133	-0.105220	-0.088995	-0.033525	-0.0372
pixel352	-0.026808	-0.000984	-0.004930	-0.006567	-0.005218	0.001453	0.004575	-0.001831	0.003687	0.025983	0.078889	0.152062	0.142607	0.145315	0.1378
pixel353	-0.011316	-0.001172	-0.004674	-0.003914	-0.004405	-0.001421	0.001977	-0.003256	-0.001069	0.008567	0.036829	0.123978	0.146919	0.136987	0.1356
pixel354	0.054199	0.000824	-0.003620	-0.004541	-0.001662	-0.001977	0.002903	-0.004922	-0.004307	0.004418	0.023412	0.080451	0.094076	0.092595	0.0996
pixel355	0.132829	-0.004022	-0.002687	-0.003470	0.001017	-0.002460	0.002993	0.001460	0.007687	0.020003	0.021900	0.020397	0.019511	0.032666	0.0549
pixel356	0.301165	-0.004887	0.000920	0.004291	0.009420	0.007613	0.014772	0.014498	0.021753	0.032168	-0.033847	-0.190909	-0.184060	-0.098431	-0.0574
pixel357	0.388864	0.003985	0.004294	0.003544	0.007746	0.002644	0.005844	-0.000797	-0.004244	-0.023290	-0.109209	-0.266580	-0.237305	-0.109558	-0.0656
pixel358	0.440565	0.004366	0.005509	-0.001577	0.005631	0.005830	0.011524	0.005350	-0.002030	-0.033943	-0.126078	-0.278543	-0.261926	-0.138187	-0.0918
pixel359	0.480626	-0.001652	0.002789	0.000628	0.007449	0.011835	0.018614	0.008307	-0.006875	-0.041543	-0.142374	-0.292258	-0.284985	-0.179625	-0.1383
pixel360	0.544175	-0.004073	0.005338	0.003111	0.009174	0.016307	0.016258	0.002732	-0.016200	-0.051060	-0.148635	-0.296891	-0.328696	-0.278440	-0.2530
pixel361	0.623781	-0.001839	0.006598	0.005217	0.012009	0.014872	0.016007	-0.000040	-0.024888	-0.066969	-0.170186	-0.323952	-0.405464	-0.434367	-0.4122
pixel362	0.645254	-0.000931	0.004595	-0.000309	0.002038	0.006786	0.004290	-0.016749	-0.053839	-0.109600	-0.208791	-0.345207	-0.430385	-0.469270	-0.4456
pixel363	0.520376	0.001140	-0.003941	-0.005994	-0.004378	-0.002366	-0.008739	-0.028929	-0.066003	-0.114174	-0.193234	-0.300300	-0.367358	-0.399291	-0.3830
pixel364	0.270278	0.005568	-0.001069	-0.007274	0.001411	0.006356	0.001532	-0.012126	-0.036213	-0.065540	-0.110221	-0.169577	-0.206323	-0.223610	-0.2158
pixel365	0.172952	0.001712	0.016827	0.026163	0.002982	-0.001816	-0.005545	-0.010283	-0.022227	-0.034322	-0.056040	-0.086588	-0.105723	-0.114832	-0.1119
pixel366	0.230871	0.003525	0.016050	0.012009	0.013818	0.027584	0.019612	0.009662	-0.013666	-0.037529	-0.072861	-0.118013	-0.144792	-0.155527	-0.1478
pixel367	0.229977	0.010330	0.023347	0.015868	0.032585	0.065183	0.062216	0.043454	0.020603	-0.006876	-0.053853	-0.116303	-0.151915	-0.163361	-0.142
pixel368	0.201612	0.009138	0.015889	0.025940	0.041603	0.061345	0.072483	0.073200	0.074295	0.062506	0.014253	-0.064611	-0.103589	-0.124064	-0.1013
pixel369	0.126835	0.002476	0.014192	0.023913	0.041828	0.058422	0.065671	0.069663	0.075573	0.081120	0.048346	-0.019143	-0.000554	0.026629	0.0340
pixel370	0.070905	0.004667	0.008025	0.010953	0.023096	0.041053	0.047944	0.055186	0.058808	0.056879	0.011800	-0.058166	-0.000959	0.126094	0.1545
pixel371	0.050293	0.006957	0.008878	0.008001	0.019880	0.028717	0.036716	0.043598	0.056784	0.057420	0.016118	-0.063893	-0.007969	0.131454	0.1724
pixel372	0.024479	0.009341	0.008382	0.011533	0.020718	0.024507	0.030871	0.035133	0.047542	0.045835	0.003564	-0.076539	-0.007697	0.145023	0.1890
pixel373	-0.087368	-0.001908	0.001955	0.014725	0.024021	0.027649	0.039557	0.050180	0.075192	0.105397	0.075041	-0.019811	0.024838	0.146618	0.1897
pixel374	-0.218763	-0.000200	-0.001602	0.007705	0.017088	0.020131	0.030079	0.041279	0.072810	0.117339	0.173508	0.124730	0.146576	0.201555	0.2215
pixel375	-0.333372	0.003402	-0.005106	0.003014	0.010947	0.014230	0.021399	0.025578	0.043359	0.073265	0.137360	0.253218	0.283273	0.296259	0.2957
pixel376	-0.277174	0.001173	-0.007326	0.000992	0.008006	0.011255	0.018520	0.020204	0.034806	0.060202	0.105934	0.204672	0.257551	0.275093	0.2768
pixel377	-0.180274	0.001186	-0.004001	0.000476	0.005518	0.009764	0.015103	0.013948	0.023494	0.048860	0.099996	0.182786	0.219219	0.228170	0.2297
pixel378	0.051226	0.001172	-0.003607	-0.002045	0.004243	0.010138	0.015089	0.013225	0.021639	0.023909	0.006412	-0.017187	0.014160	0.054715	0.0611
pixel379	0.198615	0.001002	-0.001480	-0.000237	0.005312	0.011082	0.018391	0.020218	0.029474	0.030531	-0.009805	-0.137411	-0.121415	-0.062920	-0.0567
pixel380	0.010023	-0.000704	-0.006125	-0.004350	-0.001646	0.002945	0.006284	0.002664	0.007478	0.027646	0.073956	0.124247	0.109644	0.119910	0.1231
pixel381	0.009658	-0.001692	-0.005477	-0.003325	-0.001896	-0.000027	0.003726	-0.000764	-0.000611	0.006880	0.032614	0.115786	0.135651	0.128273	0.1363
pixel382	0.069973	0.001005	-0.003653	-0.004472	0.000482	0.000598	0.004629	0.000187	-0.000396	0.005063	0.019267	0.068308	0.081314	0.082081	0.0962
pixel383	0.141494	-0.003864	-0.003256	-0.003745	0.000598	-0.003164	0.001765	0.001348	0.006331	0.017439	0.022852	0.013577	0.011802	0.019518	0.0429
pixel384	0.332951	-0.005516	0.000963	0.004202	0.009347	0.007700	0.014852	0.016956	0.026713	0.035026	-0.036425	-0.205657	-0.208596	-0.132276	-0.0878
pixel385	0.437487	0.003014	0.004000	0.003299	0.008053	0.004285	0.008276	0.001315	-0.009364	-0.036709	-0.132072	-0.294694	-0.271958	-0.147467	-0.0929
pixel386	0.494672	0.003221	0.003923	-0.001932	0.004381	0.004776	0.008665	0.000793	-0.014628	-0.053995	-0.149319	-0.304536	-0.293206	-0.167965	-0.1109
pixel387	0.524912	-0.000093	0.001671	-0.001716	0.004509	0.010351	0.015634	0.005356	-0.013992	-0.051761	-0.155348	-0.309588	-0.309400	-0.207305	-0.1567
pixel388	0.573292	-0.004441	0.004363	0.001167	0.007356	0.015545	0.015109	0.001528	-0.020357	-0.056859	-0.156067	-0.306778	-0.338992	-0.284868	-0.2517
pixel389	0.640369	-0.001662	0.007432	0.004914	0.011268	0.013597	0.014460	-0.001478	-0.026970	-0.068803	-0.170427	-0.324977	-0.406758	-0.432813	-0.4058
pixel390	0.659438	-0.001187	0.005656	-0.000613	0.001916	0.007027	0.004795	-0.017185	-0.055005	-0.109018	-0.208384	-0.347141	-0.434791	-0.473953	-0.4474
pixel391	0.557666	-0.000138	-0.005173	-0.007678	-0.007388	-0.005894	-0.012662	-0.032864	-0.070407	-0.120861	-0.204308	-0.316245	-0.386648	-0.420240	-0.403
pixel392	0.313773	0.002900	-0.003395	-0.008307	0.000033	0.005789	-0.001415	-0.017100	-0.042567	-0.073267	-0.122474	-0.187764	-0.228532	-0.248449	-0.240
pixel393	0.187922	0.002127	0.010460	0.017336	0.000786	0.000368	-0.002855	-0.008267	-0.024947	-0.040361	-0.066980	-0.102718	-0.125170	-0.136060	-0.132
pixel394	0.264361	0.000749	0.007577	0.003920	0.008180	0.023653	0.016796	0.003955	-0.021653	-0.050108	-0.092900	-0.148242	-0.181890	-0.196316	-0.188
pixel395	0.275338	0.001901	0.016637	0.010664	0.025457	0.052981	0.047846	0.031191	0.006649	-0.023179	-0.077398	-0.151562	-0.194754	-0.210110	-0.189
pixel396	0.254389	0.003140	0.010307	0.019722	0.033633	0.050482	0.061005	0.058683	0.055931	0.040457	-0.013601	-0.102032	-0.146175	-0.168556	-0.146
pixel397	0.186846	0.002457	0.009396	0.019639	0.035235	0.050412	0.055438	0.057384	0.055996	0.052058	0.008967	-0.069948	-0.056606	-0.025754	-0.0143
pixel398	0.141660	0.005378	0.005321	0.006853	0.019316	0.036116	0.041779	0.046027	0.040787	0.028283	-0.029328	-0.115501	-0.070481	0.050612	0.0856
pixel399	0.125130	0.007224	0.006141	0.004953	0.017095	0.021404	0.029324	0.032025	0.033942	0.023085	-0.028355	-0.120361	-0.071582	0.064510	0.1112
pixel400	0.097188	0.009450	0.007193	0.009556	0.020013	0.022144	0.027844	0.030379	0.036374	0.023477	-0.034502	-0.131681	-0.074108	0.079954	0.1349
pixel401	-0.036894	-0.002325	0.001276	0.014392	0.024419	0.026891	0.039668	0.051125	0.077034	0.106604	0.065914	-0.043918	-0.015815	0.087087	0.1338
pixel402	-0.180436	0.000215	-0.002762	0.006637	0.017035	0.018421	0.027884	0.034862	0.063555	0.108601	0.163676	0.105379	0.123247	0.170349	0.1861
pixel403	-0.269066	0.003565	-0.005374	0.002025	0.009172	0.011001	0.017507	0.019190	0.034701	0.061996	0.119474	0.218000	0.245024	0.259900	0.2645
pixel404	-0.192850	0.000768	-0.005830	0.000003	0.006045	0.007298	0.013835	0.014104	0.024563	0.044296	0.082949	0.176718	0.222606	0.234527	0.2392
pixel405	-0.098288	0.000022	-0.004797	-0.001023	0.004800	0.005580	0.011220	0.009199	0.016378	0.037209	0.080751	0.145446	0.175973	0.186356	0.1922
pixel406	0.095971	0.001367	-0.002038	-0.001515	0.004545	0.008288	0.012645	0.011794	0.018235	0.016949	-0.007131	-0.042868	-0.013089	0.030765	0.0404
pixel407	0.215479	0.002372	0.000156	0.001280	0.006599	0.011061	0.018339	0.018901	0.025008	0.022402	-0.022125	-0.151444	-0.132597	-0.069572	-0.0602
pixel408	0.028413	0.000270	-0.004077	-0.004663	0.000153	0.005832	0.010124	0.008045	0.011723	0.029390	0.071135	0.106085	0.090779	0.107501	0.1146
pixel409	0.009816	-0.001448	-0.005807	-0.004380	-0.000376	0.001395	0.004914	-0.000390	0.001531	0.009100	0.035559	0.117907	0.136394	0.129465	0.1407
pixel410	0.073927	0.001337	-0.004012	-0.004529	0.000774	-0.001586	0.003573	-0.002185	-0.003537	0.003628	0.018725	0.064345	0.077705	0.078673	0.0962
pixel411	0.150152	-0.003295	-0.004477	-0.004008	0.000807	-0.006652	-0.000634	-0.004312	-0.001440	0.011417	0.018257	-0.001074	-0.001979	0.008563	0.0335

pixel412	0.340497	-0.004957	-0.000221	0.003402	0.009450	0.006309	0.014078	0.017486	0.028353	0.039588	-0.031417	-0.205449	-0.217724	-0.153849	-0.1106
pixel413	0.456279	0.004225	0.004796	0.004041	0.009499	0.006831	0.012187	0.004682	-0.008056	-0.035454	-0.136707	-0.304681	-0.286244	-0.165410	-0.1060
pixel414	0.507214	0.003268	0.004173	-0.001966	0.004216	0.004002	0.007438	-0.000277	-0.021162	-0.064308	-0.161789	-0.314722	-0.299690	-0.166918	-0.1039
pixel415	0.532865	0.000109	0.000523	-0.003062	0.003948	0.009733	0.015669	0.005365	-0.017571	-0.059036	-0.160277	-0.311956	-0.310560	-0.205411	-0.1492
pixel416	0.578455	-0.002437	0.002529	0.000024	0.006862	0.016791	0.016413	0.003347	-0.021659	-0.061425	-0.160339	-0.309897	-0.337440	-0.275571	-0.237
pixel417	0.643761	-0.001488	0.006111	0.003484	0.009628	0.012543	0.014628	-0.000969	-0.026939	-0.070195	-0.170939	-0.324798	-0.403805	-0.424112	-0.395
pixel418	0.664796	-0.002263	0.006561	0.000431	0.002118	0.007121	0.005589	-0.015718	-0.051966	-0.105717	-0.206752	-0.348949	-0.438004	-0.477007	-0.449
pixel419	0.590017	-0.001893	-0.006262	-0.009118	-0.009832	-0.007483	-0.013722	-0.035103	-0.074006	-0.126079	-0.213315	-0.330428	-0.404074	-0.439073	-0.421
pixel420	0.353107	0.000392	-0.005693	-0.009064	-0.003556	-0.000163	-0.007526	-0.022075	-0.048442	-0.081294	-0.134447	-0.205372	-0.249977	-0.271952	-0.263
pixel421	0.223840	0.001364	0.005268	0.011542	-0.004610	-0.005482	-0.006900	-0.014789	-0.034675	-0.057029	-0.093105	-0.141406	-0.172286	-0.188009	-0.184
pixel422	0.313410	0.000945	0.002329	-0.000882	-0.000689	0.006497	0.000751	-0.011731	-0.038089	-0.073083	-0.125696	-0.195858	-0.239598	-0.259862	-0.250
pixel423	0.328759	0.000711	0.012435	0.004911	0.016939	0.039435	0.033819	0.017940	-0.009289	-0.045498	-0.108065	-0.195053	-0.246911	-0.268352	-0.248
pixel424	0.309915	-0.001195	0.006234	0.013487	0.025316	0.038829	0.047644	0.043370	0.034157	0.014024	-0.046966	-0.145953	-0.194890	-0.220089	-0.1992
pixel425	0.241186	-0.000114	0.006013	0.015847	0.029843	0.040289	0.044293	0.044010	0.034483	0.023146	-0.029402	-0.118849	-0.110849	-0.073910	-0.0593
pixel426	0.192311	0.000545	0.002628	0.003577	0.015540	0.031447	0.034351	0.036817	0.026672	0.007667	-0.058638	-0.156201	-0.118689	0.000802	0.0406
pixel427	0.172213	0.005385	0.003946	0.002190	0.015113	0.020380	0.025455	0.024129	0.019662	0.000880	-0.058748	-0.156800	-0.109899	0.027987	0.0779
pixel428	0.147450	0.009779	0.007561	0.009213	0.019257	0.020771	0.026493	0.028537	0.033202	0.013875	-0.055201	-0.167330	-0.120272	0.035243	0.0988
pixel429	0.012772	-0.002539	0.000661	0.013973	0.021765	0.025427	0.038257	0.050755	0.077550	0.107838	0.062598	-0.063081	-0.052586	0.026575	0.0741
pixel430	-0.113134	0.000264	-0.004226	0.004597	0.012896	0.015855	0.023992	0.028642	0.052906	0.093905	0.139039	0.066256	0.080016	0.123096	0.1353
pixel431	-0.180144	0.002162	-0.004504	0.001145	0.006597	0.008004	0.013482	0.013902	0.024440	0.045588	0.092756	0.170832	0.190763	0.205506	0.2155
pixel432	-0.120725	-0.000603	-0.005648	-0.001720	0.002092	0.003151	0.009025	0.008361	0.014730	0.031449	0.062668	0.148479	0.186083	0.193801	0.2022
pixel433	-0.045147	-0.000722	-0.004500	-0.002019	0.003500	0.001784	0.006475	0.004648	0.012012	0.030222	0.063752	0.112596	0.135752	0.148562	0.1579
pixel434	0.130217	0.001087	-0.000720	0.000213	0.004212	0.007048	0.010840	0.008147	0.010117	0.006823	-0.022882	-0.069770	-0.042154	0.004240	0.0181
pixel435	0.234050	0.002566	0.001456	0.002221	0.007103	0.013196	0.019162	0.016080	0.014386	0.011268	-0.035908	-0.167684	-0.148596	-0.087001	-0.0739
pixel436	0.054986	-0.000398	-0.003546	-0.004257	0.000358	0.006642	0.010156	0.007146	0.008158	0.026687	0.059881	0.077154	0.059005	0.079924	0.0911
pixel437	0.012921	-0.002216	-0.006247	-0.004777	-0.001332	0.000470	0.003488	-0.002494	-0.002121	0.005166	0.029943	0.111327	0.128585	0.121316	0.1360
pixel438	0.078585	0.000840	-0.004494	-0.005787	-0.000565	-0.002596	0.003038	-0.003613	-0.007131	-0.001548	0.010272	0.052307	0.064906	0.064973	0.0842
pixel439	0.165803	-0.003228	-0.004581	-0.005678	-0.001644	-0.007589	-0.002164	-0.006195	-0.005827	0.005204	0.006833	-0.025593	-0.028563	-0.015495	0.0118
pixel440	0.350106	-0.004889	0.000014	0.002835	0.008677	0.005412	0.011861	0.016019	0.027883	0.043054	-0.027426	-0.209558	-0.232615	-0.182297	-0.141
pixel441	0.473091	0.004675	0.003845	0.003491	0.010807	0.008522	0.013651	0.008174	-0.003252	-0.031772	-0.138209	-0.315247	-0.308530	-0.198136	-0.135
pixel442	0.518027	0.003086	0.003527	-0.002773	0.005118	0.005292	0.007154	-0.003846	-0.028245	-0.074954	-0.174088	-0.327317	-0.311474	-0.173412	-0.1059
pixel443	0.537951	-0.002304	-0.000397	-0.004316	0.002625	0.007840	0.013481	0.002130	-0.023062	-0.065703	-0.167180	-0.318460	-0.315183	-0.205559	-0.146
pixel444	0.581663	-0.004408	0.001642	0.000031	0.005553	0.012590	0.013572	0.002279	-0.025051	-0.067382	-0.167120	-0.316808	-0.340678	-0.271987	-0.230
pixel445	0.645520	-0.002535	0.005224	0.001622	0.006557	0.008281	0.010061	-0.005610	-0.032803	-0.075180	-0.176425	-0.330274	-0.405500	-0.419607	-0.390
pixel446	0.664342	-0.002522	0.007240	-0.000328	0.000917	0.006067	0.004789	-0.016807	-0.053418	-0.107044	-0.209433	-0.354739	-0.444882	-0.484258	-0.456
pixel447	0.611336	-0.001519	-0.006138	-0.009808	-0.011486	-0.010013	-0.015682	-0.036982	-0.076415	-0.130645	-0.220827	-0.342745	-0.419493	-0.456049	-0.438
pixel448	0.376759	0.000510	-0.006090	-0.009410	-0.004905	-0.003960	-0.011965	-0.025282	-0.053110	-0.088407	-0.144632	-0.220343	-0.268226	-0.292156	-0.283
pixel449	0.258928	0.001124	0.002684	0.007765	-0.006810	-0.007805	-0.009925	-0.020536	-0.042334	-0.069897	-0.114680	-0.174710	-0.212928	-0.232517	-0.228
pixel450	0.344506	-0.000637	-0.001338	-0.003763	-0.003032	0.001967	-0.003418	-0.016158	-0.044889	-0.084258	-0.143522	-0.223488	-0.273279	-0.296744	-0.286
pixel451	0.367891	0.000421	0.010436	0.002642	0.013260	0.031002	0.026669	0.009718	-0.017171	-0.056486	-0.124908	-0.220708	-0.278052	-0.303250	-0.284
pixel452	0.349992	-0.000307	0.003757	0.009229	0.019013	0.028408	0.037157	0.032192	0.020781	-0.003191	-0.068265	-0.174503	-0.225442	-0.251513	-0.232
pixel453	0.283575	-0.000218	0.003291	0.011906	0.024161	0.029933	0.034555	0.032647	0.020213	0.003774	-0.056450	-0.153644	-0.147267	-0.104340	-0.087
pixel454	0.238042	-0.001334	0.000187	0.000341	0.012501	0.025403	0.027504	0.028041	0.016419	-0.007351	-0.080522	-0.186156	-0.152623	-0.034272	0.0082
pixel455	0.226400	0.004897	0.002133	-0.000686	0.013755	0.017244	0.018938	0.015878	0.007125	-0.019153	-0.087725	-0.194786	-0.150382	-0.011136	0.0407
pixel456	0.214671	0.008226	0.006208	0.006910	0.016985	0.020213	0.025601	0.027720	0.030658	0.006398	-0.075421	-0.206657	-0.176348	-0.027202	0.0409
pixel457	0.082560	-0.002907	0.000664	0.012979	0.019114	0.021124	0.033677	0.044382	0.073640	0.105220	0.052933	-0.093390	-0.099583	-0.043678	-0.0000
pixel458	-0.033153	0.000746	-0.004456	0.003049	0.009064	0.008999	0.017582	0.020979	0.040977	0.075037	0.108554	0.021302	0.029745	0.073679	0.0845
pixel459	-0.099210	0.001483	-0.005818	-0.000840	0.003090	0.000823	0.007876	0.007841	0.013962	0.028036	0.069310	0.131197	0.144818	0.156307	0.1698
pixel460	-0.072366	-0.000681	-0.004204	-0.002660	-0.001861	-0.002501	0.004670	0.001105	0.005654	0.019051	0.048233	0.129179	0.160045	0.162901	0.1738
pixel461	-0.010706	-0.000359	-0.002599	-0.001422	0.001396	-0.000479	0.004309	-0.002767	0.001732	0.016997	0.046387	0.088974	0.108323	0.119437	0.1305
pixel462	0.161547	0.000492	-0.001500	0.000318	0.003976	0.008176	0.010739	0.002631	-0.000544	-0.007276	-0.039853	-0.099444	-0.073464	-0.025647	-0.010
pixel463	0.253411	0.002384	0.001006	0.002566	0.006011	0.010950	0.016006	0.008356	0.004319	-0.001041	-0.050185	-0.187427	-0.168857	-0.107911	-0.093
pixel464	0.090632	-0.002364	-0.003907	-0.004359	-0.002422	0.004195	0.007773	0.001158	-0.000063	0.016972	0.041877	0.037057	0.018295	0.042034	0.0536
pixel465	0.025188	-0.003974	-0.006325	-0.005172	-0.004011	-0.002741	0.000824	-0.007229	-0.011403	-0.005224	0.021874	0.100870	0.111797	0.102715	0.1191
pixel466	0.082364	-0.001225	-0.004714	-0.005518	-0.001989	-0.005250	0.000529	-0.005872	-0.009506	-0.006091	0.004819	0.046118	0.057736	0.054289	0.0744
pixel467	0.166670	-0.003143	-0.004351	-0.005464	-0.003188	-0.007544	-0.002458	-0.006037	-0.005765	0.002340	0.000368	-0.037273	-0.038925	-0.023986	0.0053
pixel468	0.342264	-0.005321	0.000195	0.003103	0.007610	0.004635	0.012417	0.014849	0.029326	0.047198	-0.021591	-0.204447	-0.230593	-0.188944	-0.151
pixel469	0.468023	0.004348	0.004278	0.003606	0.010465	0.008829	0.015044	0.013522	0.008646	-0.016762	-0.125255	-0.305768	-0.308233	-0.212459	-0.1519
pixel470	0.514259	0.003190	0.004033	-0.003283	0.005720	0.006868	0.009049	-0.001494	-0.027758	-0.076400	-0.175509	-0.326927	-0.309839	-0.169292	-0.1002
pixel471	0.531226	-0.003882	-0.000589	-0.003893	0.003126	0.006800	0.012081	-0.000157	-0.025326	-0.068901	-0.169293	-0.318309	-0.311908	-0.198993	-0.1380
pixel472	0.574921	-0.004408	0.002038	-0.000823	0.004153	0.008559	0.009508	-0.001593	-0.028825	-0.072119	-0.172000	-0.320045	-0.339498	-0.264545	-0.220
pixel473	0.638789	-0.001399	0.004871	0.000083	0.005037	0.006018	0.008846	-0.006835	-0.034431	-0.078583	-0.178737	-0.332587	-0.404461	-0.411625	-0.381
pixel474	0.656927	-0.002545	0.006992	-0.000603	0.000540	0.005369	0.005107	-0.016423	-0.052707	-0.107134	-0.209657	-0.356756	-0.447168	-0.486756	-0.458
pixel475	0.617461	-0.001500	-0.005654	-0.009348	-0.011919	-0.010233	-0.015603	-0.037391	-0.076370	-0.131732	-0.223258	-0.347142	-0.425258	-0.462651	-0.444
pixel476	0.393600	-0.001237	-0.006599	-0.009492	-0.005930	-0.005196	-0.013737	-0.027494	-0.056149	-0.093076	-0.151823	-0.231226	-0.281159	-0.306467	-0.297
pixel477	0.263982	0.001621	0.003405	0.009142	-0.006337	-0.006990	-0.009658	-0.021261	-0.043362	-0.072386	-0.119057	-0.181838	-0.221637	-0.241928	-0.236
pixel478	0.381357	-0.001006	-0.003615	-0.005139	-0.003217	-0.001671	-0.007219	-0.019612	-0.049190	-0.091162	-0.154897	-0.241159	-0.294956	-0.320467	-0.308
pixel479	0.417636	-0.000873	0.012063	0.001870	0.009162	0.026908	0.025189	0.006476	-0.022214	-0.063607	-0.137241	-0.241431	-0.303721	-0.331931	-0.313
pixel480	0.393825	-0.000264	0.004328	0.007047	0.016144	0.025659	0.033766	0.027442	0.012948	-0.013125	-0.081006	-0.194773	-0.247516	-0.273602	-0.255

pixel481	0.330289	-0.001053	0.002058	0.008170	0.018460	0.025041	0.029385	0.024667	0.009407	-0.011145	-0.076425	-0.180047	-0.175692	-0.127684	-0.109
pixel482	0.287735	-0.003575	-0.001851	-0.002329	0.009656	0.020826	0.024343	0.023909	0.009049	-0.018263	-0.095952	-0.207219	-0.177536	-0.061382	-0.016
pixel483	0.280561	0.004208	0.000860	-0.003083	0.013338	0.015684	0.017724	0.012153	-0.002538	-0.032842	-0.107795	-0.221613	-0.180070	-0.039724	0.0150
pixel484	0.273590	0.008211	0.006581	0.007254	0.016912	0.020047	0.026593	0.027883	0.033307	0.006431	-0.083195	-0.230692	-0.218561	-0.079754	-0.005
pixel485	0.134780	-0.003319	0.000922	0.011704	0.018599	0.018422	0.030492	0.040453	0.070880	0.103074	0.050885	-0.109828	-0.125953	-0.088763	-0.050
pixel486	0.023986	0.000160	-0.005573	0.000412	0.006889	0.005500	0.012413	0.014417	0.031801	0.060918	0.089260	-0.006009	-0.001807	0.045080	0.0581
pixel487	-0.063353	0.000973	-0.006818	-0.004062	-0.000701	-0.003670	0.002606	0.001745	0.008016	0.023543	0.063010	0.117083	0.126788	0.133889	0.1500
pixel488	-0.064470	-0.000864	-0.003504	-0.005676	-0.002869	-0.006037	-0.000064	-0.004410	0.000588	0.015376	0.045231	0.127861	0.156513	0.158161	0.1705
pixel489	-0.011351	-0.000460	-0.003618	-0.003556	0.001091	0.000351	0.001708	-0.007899	-0.004975	0.010648	0.035434	0.082988	0.107228	0.118247	0.1315
pixel490	0.167335	0.000120	-0.003445	-0.000696	0.004258	0.009321	0.008051	-0.002536	-0.004294	-0.007988	-0.045702	-0.113762	-0.084905	-0.034634	-0.018
pixel491	0.248480	0.001321	-0.001592	0.002023	0.006074	0.009717	0.010315	0.001164	-0.001984	-0.005060	-0.055879	-0.192868	-0.173210	-0.111250	-0.094
pixel492	0.090707	-0.000421	-0.004982	-0.003340	-0.001197	0.004903	0.007210	-0.001182	0.000043	0.018725	0.037673	0.017390	0.002604	0.031764	0.0450
pixel493	-0.006225	-0.001730	-0.006963	-0.003951	-0.003305	-0.005371	-0.002503	-0.009184	-0.009294	0.000900	0.032566	0.116023	0.128398	0.119976	0.1370
pixel494	0.034415	-0.000095	-0.005687	-0.004835	-0.001806	-0.004906	-0.000233	-0.005982	-0.006153	0.002476	0.021639	0.074268	0.089146	0.084974	0.1061
pixel495	0.113984	-0.002119	-0.004721	-0.004365	-0.000974	-0.004066	0.000059	-0.002756	0.001538	0.013546	0.020733	-0.004171	0.002655	0.021694	0.0508
pixel496	0.282032	-0.003988	0.000688	0.003646	0.010087	0.007187	0.015756	0.019806	0.037836	0.061203	0.006306	-0.157534	-0.173544	-0.132135	-0.097
pixel497	0.416776	0.005115	0.005600	0.006029	0.014039	0.012505	0.020840	0.022001	0.027992	0.014830	-0.084042	-0.257442	-0.265084	-0.182870	-0.125
pixel498	0.473678	0.003214	0.002749	-0.003011	0.008093	0.008848	0.011993	0.003181	-0.018967	-0.063755	-0.157171	-0.300391	-0.277413	-0.133166	-0.062
pixel499	0.491404	-0.005466	-0.001636	-0.004162	0.004977	0.008150	0.014846	0.002252	-0.020458	-0.061071	-0.155301	-0.294992	-0.280989	-0.164029	-0.101
pixel500	0.541205	-0.004550	0.001573	-0.002073	0.004999	0.010576	0.012627	0.001251	-0.025122	-0.066208	-0.161626	-0.302983	-0.314504	-0.232453	-0.187
pixel501	0.609775	-0.001512	0.004566	-0.000616	0.005547	0.007743	0.010814	-0.005099	-0.030831	-0.072137	-0.167994	-0.316430	-0.381092	-0.379701	-0.349
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

```python
#display the heatmap to represent correlation intensity
plt.figure(figsize=(15,15))
sns.heatmap(data=df.corr())
```

<AxesSubplot:>
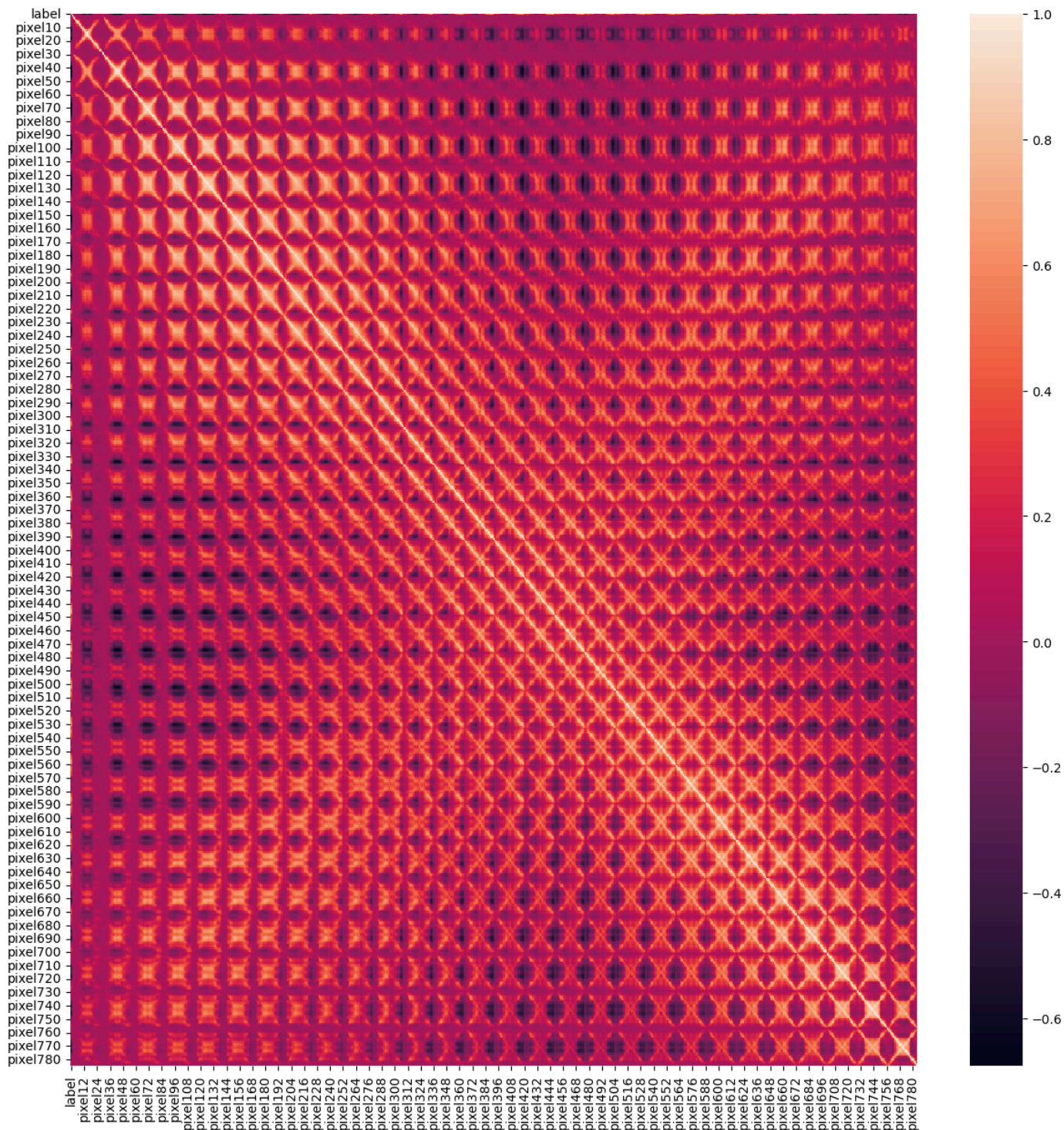

```python
#plot the count of labels for each class for the data
df['label'].value_counts().plot(kind='bar')
```

<AxesSubplot:>
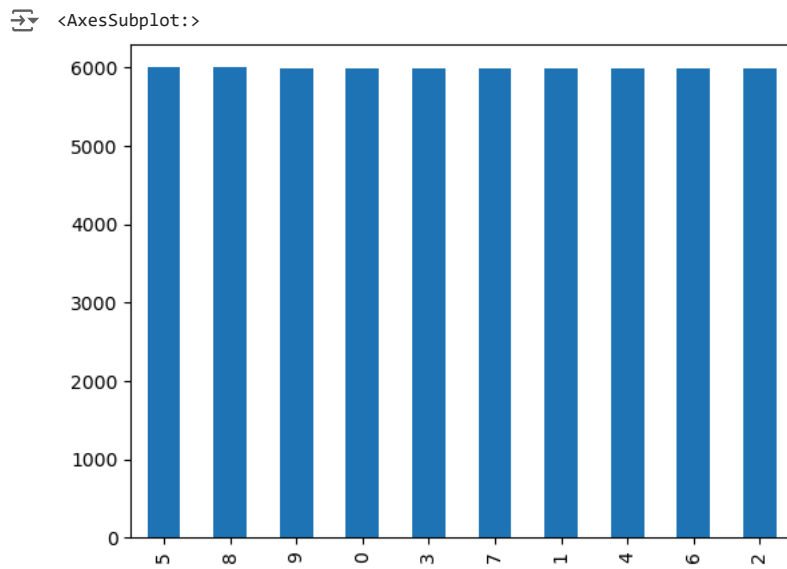

```
#assign the label to y variable and x to the pixels
y = df["label"]
X = df.drop(["label"], axis =1)
```

```
#view the pixels value to the first image
X.iloc[0]
```

```
pixel1     0
pixel2     0
pixel3     0
pixel4     0
pixel5     0
          ..
pixel780   0
pixel781   0
pixel782   0
pixel783   0
pixel784   0
Name: 0, Length: 784, dtype: int64
```

```
#array of pixels
tab = np.array(X)
```

```
# reshape the array into (28,28) pixel
images = tab.reshape(len(tab),28,28)
```

```
#check image dimension
images.shape
```

(59957, 28, 28)

```
#display first 20 images from the data
plt.figure(figsize=(10,20))
for i in range (0,20):
    plt.subplot(10,5,i+1)
    plt.imshow(images[i],cmap="Greys")
    plt.axis(False)
    plt.title(y[i])
```

```
#normalize image pixels and encode its label
X_train = (X.values.reshape(59957,28,28,1))/255
y_train = to_categorical(y)


#split data into tain and validation
X_train, X_val, y_train, y_val = train_test_split(X_train, y_train, test_size=0.2, random_state=42)


#print splits dimension
print(X_train.shape)
print(X_val.shape)
print(y_train.shape)
print(y_val.shape)
```

```
(47965, 28, 28, 1)
(11992, 28, 28, 1)
(47965, 10)
(11992, 10)
```

∨ LENET model

```
#LENET architecture
model = Sequential()
model.add(Conv2D(6, (5,5),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D((2,2)))
model.add(Conv2D(16, (5,5), activation='relu'))
model.add(MaxPool2D((2,2)))
model.add(Flatten())
model.add(Dense(120, activation='relu'))
model.add(Dense(84, activation='relu'))
model.add(Dense(10, activation='softmax'))


#show model summery
model.summary()
```

```
Model: "sequential"
_____
 Layer (type)                Output Shape              Param #
=================================================================
```

```
  conv2d (Conv2D)              (None, 24, 24, 6)         156

  max_pooling2d (MaxPooling2D  (None, 12, 12, 6)         0
  )

  conv2d_1 (Conv2D)            (None, 8, 8, 16)          2416

  max_pooling2d_1 (MaxPooling  (None, 4, 4, 16)          0
  2D)

  flatten_7 (Flatten)          (None, 256)               0

  dense_19 (Dense)             (None, 120)               30840

  dense_20 (Dense)             (None, 84)                10164

  dense_21 (Dense)             (None, 10)                850

  =================================================================
  Total params: 44,426
  Trainable params: 44,426
  Non-trainable params: 0
  _____


#model compilation
model.compile(optimizer="adam", loss="categorical_crossentropy", metrics=["accuracy"])


# Train the model with early stopping based on validation loss
history = model.fit(X_train, y_train, validation_data=(X_val, y_val), epochs=20, batch_size=128, verbose=1)

⇥  Epoch 1/20
   375/375 [==============================] - 5s 6ms/step - loss: 0.7140 - accuracy: 0.7408 - val_loss: 0.5283 - val_accuracy: 0.8000
   Epoch 2/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.4660 - accuracy: 0.8304 - val_loss: 0.4297 - val_accuracy: 0.8428
   Epoch 3/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.4092 - accuracy: 0.8527 - val_loss: 0.3961 - val_accuracy: 0.8572
   Epoch 4/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.3744 - accuracy: 0.8646 - val_loss: 0.3867 - val_accuracy: 0.8591
   Epoch 5/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.3463 - accuracy: 0.8748 - val_loss: 0.3521 - val_accuracy: 0.8734
   Epoch 6/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.3311 - accuracy: 0.8808 - val_loss: 0.3434 - val_accuracy: 0.8753
   Epoch 7/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.3162 - accuracy: 0.8837 - val_loss: 0.3402 - val_accuracy: 0.8790
   Epoch 8/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.3000 - accuracy: 0.8908 - val_loss: 0.3367 - val_accuracy: 0.8763
   Epoch 9/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2907 - accuracy: 0.8954 - val_loss: 0.3210 - val_accuracy: 0.8853
   Epoch 10/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2806 - accuracy: 0.8969 - val_loss: 0.3130 - val_accuracy: 0.8868
   Epoch 11/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2698 - accuracy: 0.9012 - val_loss: 0.3178 - val_accuracy: 0.8842
   Epoch 12/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2651 - accuracy: 0.9027 - val_loss: 0.3025 - val_accuracy: 0.8914
   Epoch 13/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2545 - accuracy: 0.9056 - val_loss: 0.3073 - val_accuracy: 0.8894
   Epoch 14/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2472 - accuracy: 0.9086 - val_loss: 0.3170 - val_accuracy: 0.8840
   Epoch 15/20
   375/375 [==============================] - 2s 6ms/step - loss: 0.2363 - accuracy: 0.9128 - val_loss: 0.3070 - val_accuracy: 0.8877
   Epoch 16/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2309 - accuracy: 0.9144 - val_loss: 0.2976 - val_accuracy: 0.8928
   Epoch 17/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2251 - accuracy: 0.9168 - val_loss: 0.2993 - val_accuracy: 0.8926
   Epoch 18/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2190 - accuracy: 0.9179 - val_loss: 0.3233 - val_accuracy: 0.8858
   Epoch 19/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2130 - accuracy: 0.9214 - val_loss: 0.2955 - val_accuracy: 0.8924
   Epoch 20/20
   375/375 [==============================] - 2s 5ms/step - loss: 0.2069 - accuracy: 0.9229 - val_loss: 0.3099 - val_accuracy: 0.8916


#plot model accuracy
plt.plot(history.history['accuracy'])
plt.plot(history.history['val_accuracy'])
plt.title('LENET model accuracy')
plt.ylabel('accuracy')
plt.xlabel('epoch')
plt.legend(['train', 'val'], loc='upper left')
plt.show()
```

LENET model accuracy
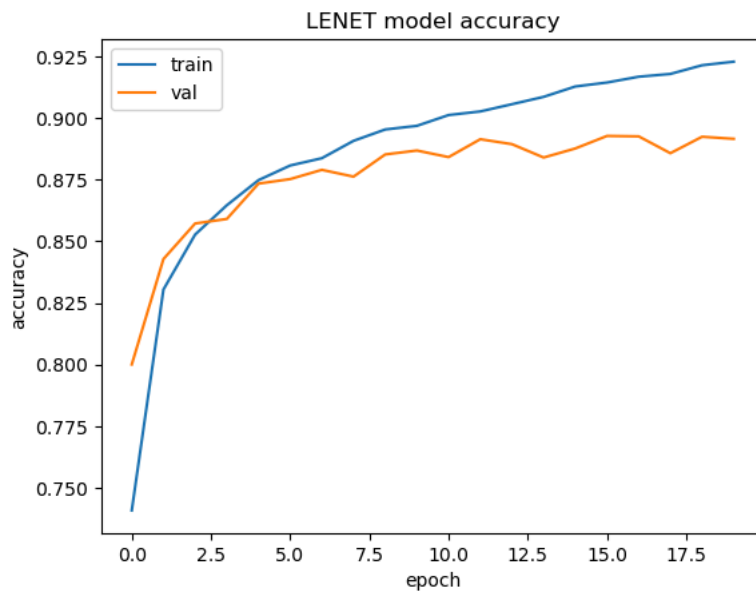
```
#plot model loss
plt.plot(history.history['loss'])
plt.plot(history.history['val_loss'])
plt.title('LENET model loss')
plt.ylabel('loss')
plt.xlabel('epoch')
plt.legend(['train', 'val'], loc='upper left')
plt.show()
```
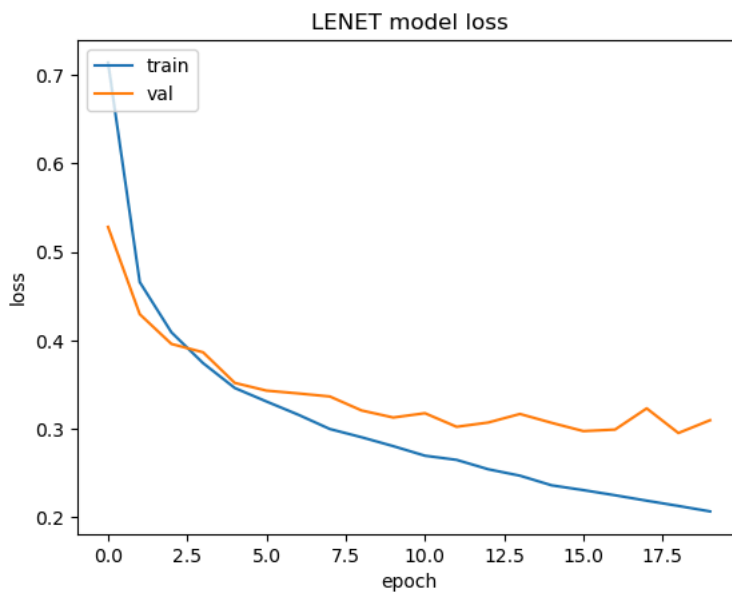

LENET model loss

⌄ LENET with modified hyperparameters

```
#build a function which has lenet model architecture and tuner trying to achive best performance
# tuner try to tune the number of nurens in the first dense layer and values of learning rat
def build_model(hp):
    modell = Sequential()
    modell.add(Conv2D(6, (5,5),activation='relu',input_shape=(28,28,1)))
    modell.add(MaxPool2D((2,2)))
    modell.add(Conv2D(16, (5,5), activation='relu'))
    modell.add(MaxPool2D((2,2)))
    modell.add(Flatten())

    modell.add(Dense(units=hp.Int('dense_units', min_value=64, max_value=128, step=16),activation='relu'))
    modell.add(Dense(84, activation='relu'))
```

```
        modell.add(Dense(10, activation='softmax'))

        modell.compile(optimizer=keras.optimizers.Adam(hp.Choice('learning_rate', values=[1e-2, 1e-3])),
                loss='categorical_crossentropy',
                metrics=['accuracy'])
        return modell


#perform tuner on the model
tuner_search=RandomSearch(build_model,objective='val_accuracy',max_trials=5,directory='output',project_name="Mnist Fashion")


#strart searching for the best hyperparameter
tuner_search.search(X_train, y_train,validation_data=(X_val, y_val),epochs=5)
```

Trial 5 Complete [00h 00m 39s]
val_accuracy: 0.8815043568611145

Best val_accuracy So Far: 0.8815043568611145
Total elapsed time: 00h 04m 14s

```
#get and print the best values for the hyperparameters
best_hp = tuner_search.get_best_hyperparameters(num_trials = 1)[0]
print(best_hp.get('dense_units'),best_hp.get('learning_rate'))
```

112 0.001

```
#tain model with the best hyperparameters which are tuned by tuner
model_with_besthdf = tuner_search.hypermodel.build(best_hp)
history_2 = model_with_besthdf.fit(X_train, y_train,validation_data=(X_val, y_val),epochs=8)

val_acc = history_2.history['val_accuracy']
best_epoch = val_acc.index(max(val_acc)) + 1
print((best_epoch,))
```

Epoch 1/8
1499/1499 [==============================] - 9s 5ms/step - loss: 0.5816 - accuracy: 0.7851 - val_loss: 0.4672 - val_accuracy: 0.8233
Epoch 2/8
1499/1499 [==============================] - 7s 5ms/step - loss: 0.3890 - accuracy: 0.8593 - val_loss: 0.3728 - val_accuracy: 0.8585
Epoch 3/8
1499/1499 [==============================] - 7s 5ms/step - loss: 0.3356 - accuracy: 0.8775 - val_loss: 0.3630 - val_accuracy: 0.8647
Epoch 4/8
1499/1499 [==============================] - 7s 5ms/step - loss: 0.3100 - accuracy: 0.8868 - val_loss: 0.3208 - val_accuracy: 0.8800
Epoch 5/8
1499/1499 [==============================] - 7s 4ms/step - loss: 0.2843 - accuracy: 0.8970 - val_loss: 0.3030 - val_accuracy: 0.8900
Epoch 6/8
1499/1499 [==============================] - 7s 4ms/step - loss: 0.2659 - accuracy: 0.9023 - val_loss: 0.3077 - val_accuracy: 0.8838
Epoch 7/8
1499/1499 [==============================] - 7s 4ms/step - loss: 0.2491 - accuracy: 0.9086 - val_loss: 0.3093 - val_accuracy: 0.8848
Epoch 8/8
1499/1499 [==============================] - 7s 4ms/step - loss: 0.2380 - accuracy: 0.9112 - val_loss: 0.2888 - val_accuracy: 0.8947
(8,)

```
#plot model accuracy
plt.plot(history_2.history['accuracy'])
plt.plot(history_2.history['val_accuracy'])
plt.title('modified LENET model accuracy')
plt.ylabel('accuracy')
plt.xlabel('epoch')
plt.legend(['train', 'val'], loc='upper left')
plt.show()
```

modified LENET model accuracy
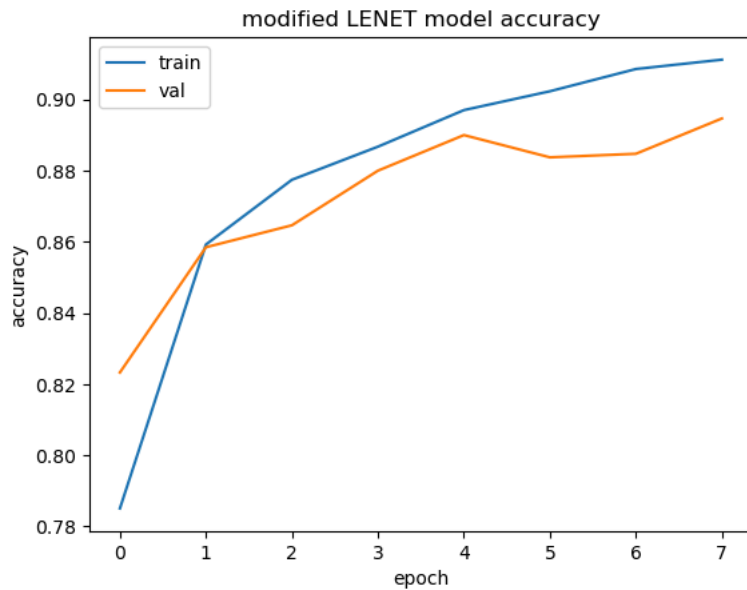
```
#plot model loss
plt.plot(history_2.history['loss'])
plt.plot(history_2.history['val_loss'])
plt.title('modified LENET model loss')
plt.ylabel('loss')
plt.xlabel('epoch')
plt.legend(['train', 'val'], loc='upper left')
plt.show()
```


modified LENET model loss
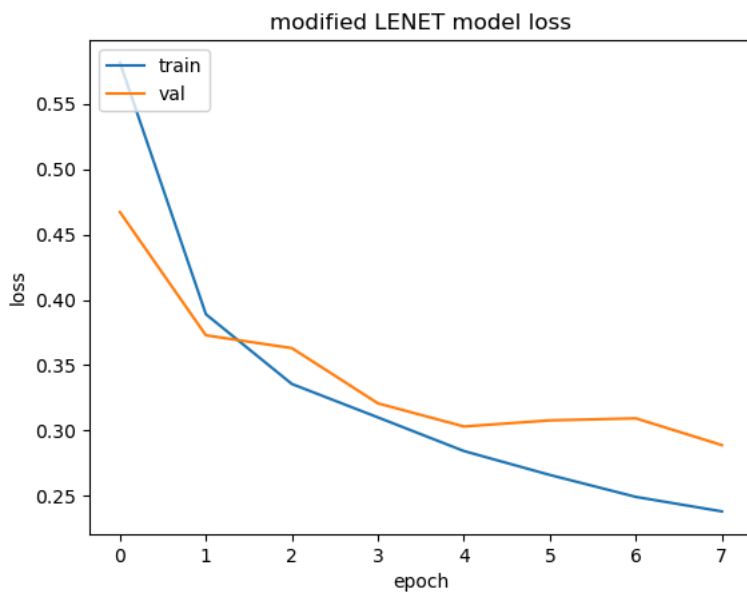
⌄ cross validation

```
# Define the number of folds for cross-validation
k = 5

# Define the KFold cross-validation splitter
kf = KFold(n_splits=k, shuffle=True, random_state=42)


# Initialize the list to store the cross-validation scores and histories
scores = []
histories = []

# Run cross-validation
```