IBB - ASSIGNMENT 3

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- link to GitHub repository: https://github.com/sv9147/Assignment3.git

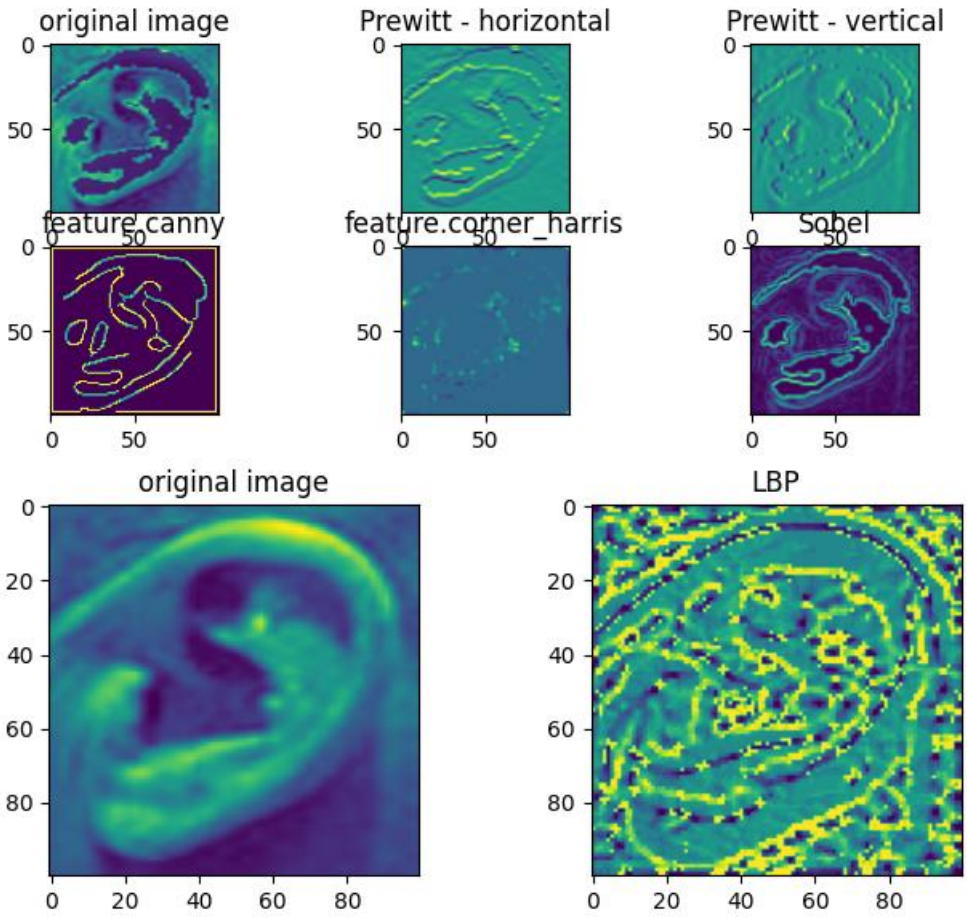
1. the dataset that was used:
   - I used the given dataset (perfect ear annotation) – from the training file

2. approaches used:
   - I went with the traditional approach
     - at first, I tested out the given Pix2Pix and LBP feature extractors
     - then I modified the LBP feature extractor to get a better rank1
     - I added my own feature extractor (edge detection [1]) based on what I read up on feature extraction [2] - I used the following functions from skimage.feature
       - corner_harris: "a small region around the feature should show a large intensity change when compared with windows shifted in any direction" [3]
       - canny
       - prewitt_v, prewitt_h
       - sobel

3. accuracy (calculated rank1):

APPROACH	PREPROCESSING	RANK1
given LBP (method=uniform)	/	1.7333333333333332
	histogram_equlization_rgb	2.1333333333333333
	contrastAdjustment	1.0666666666666667
	brightnessCorrection	2.2666666666666666
	sharpenImage	2.0
given LBP (method=nri_uniform)	/	7.6
	histogram_equlization_rgb	7.733333333333333
	contrastAdjustment	6.4
	brightnessCorrection	6.800000000000001
	sharpenImage	3.8666666666666667
corner_harris	/	0.5333333333333333
	histogram_equlization_rgb	1.0666666666666667
	contrastAdjustment	1.4666666666666666
	brightnessCorrection	1.866666666666667
	sharpenImage	0.5333333333333333
canny	/	1.6
	histogram_equlization_rgb	1.7333333333333332
	contrastAdjustment	1.2
	brightnessCorrection	2.1333333333333333
	sharpenImage	0.6666666666666667

sobel	all	0.9333333333333335
prewitt_h	all	0.9333333333333335
prewitt_v	all	0.9333333333333335
pix2pix	/	14.000000000000002



4. Literature

[1] „AnalyticsVidhya," [Elektronski]. Available: https://www.analyticsvidhya.com/blog/2019/08/3-techniques-extract-features-from-image-data-machine-learning-python/#:~:text=(297000%2C)-,Method%20%233%3A%20Extracting%20Edge%20Features,-Consider%20that%20we. [Poskus dostopa Januar 2022].

[2] „Wikipedia," [Elektronski]. Available: https://en.wikipedia.org/wiki/Corner_detection. [Poskus dostopa Januar 2022].

[3] J. a. M. N. a. S. A. Sánchez, „An Analysis and Implementation of the Harris Corner Detector," *Image Processing On Line,* Izv. 8, pp. 305-328, 2018.