License Plate Detection

Group 20:

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1. Motivation:

As the number of automobiles grows rapidly, the traffic problems increase as well, for example, car thefts, speeding, and running the red light, etc. Due to the above mentionable traffic control problem, vehicle tracking, recognition and management has become major topics of modern traffic control system. So we choose the topic "License plate detection" to :

- Improving the self-awareness of citizens about traffic problems by making fines on them
- Solving car theft problems with camera set up along the roads

2. Dataset:

- We have a dataset including 400 images of license plates with many angles and resolution.
- Collected from different datasets

Things we have tried:

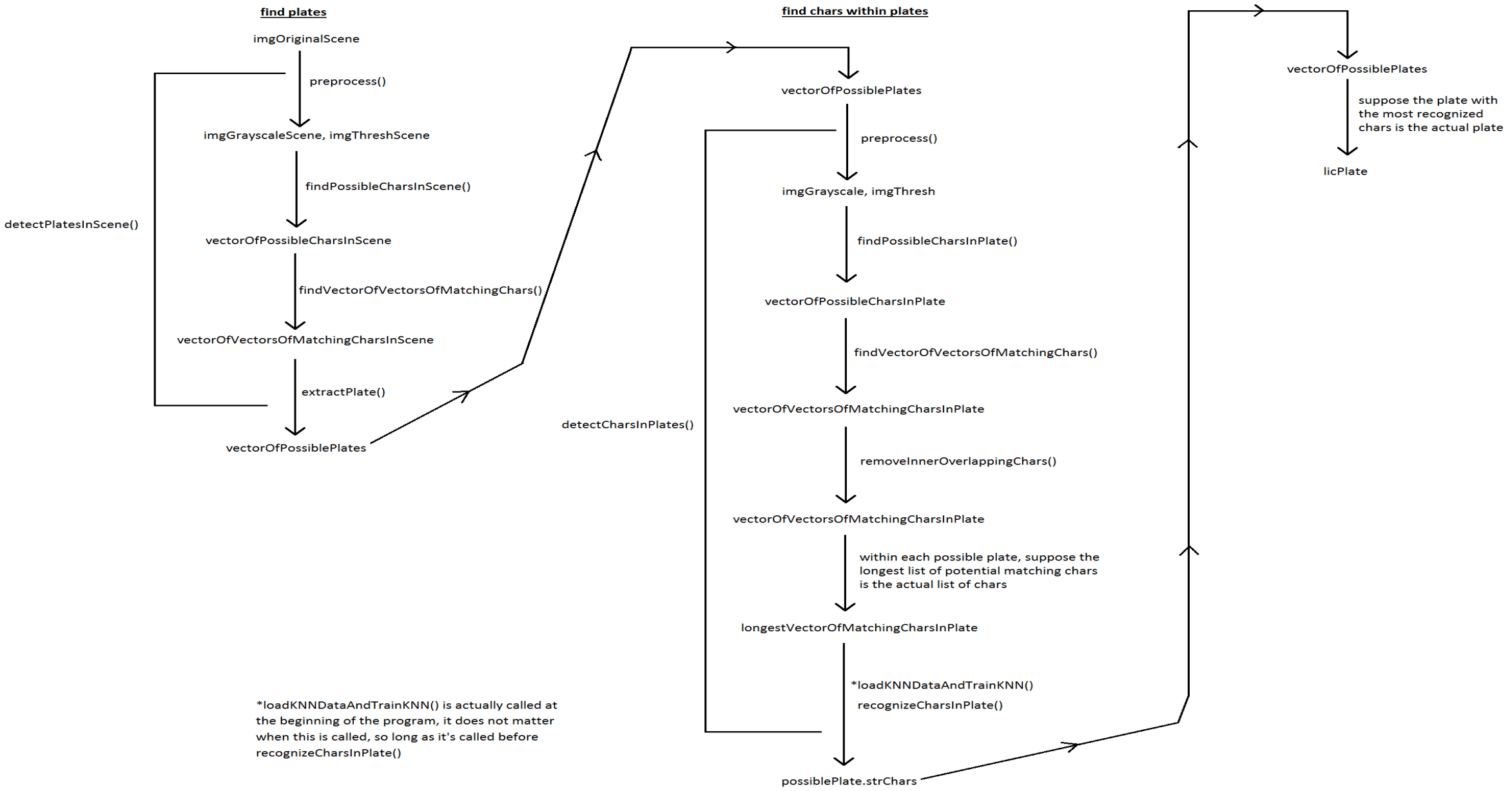
- Operate an opensource of car plate detection with datasets.
- Tested a small dataset with 50 images, 15 standard images and 35 external images.

3. **Methods:**

Steps

2 classes:

PossiblePlate
PossibleChar



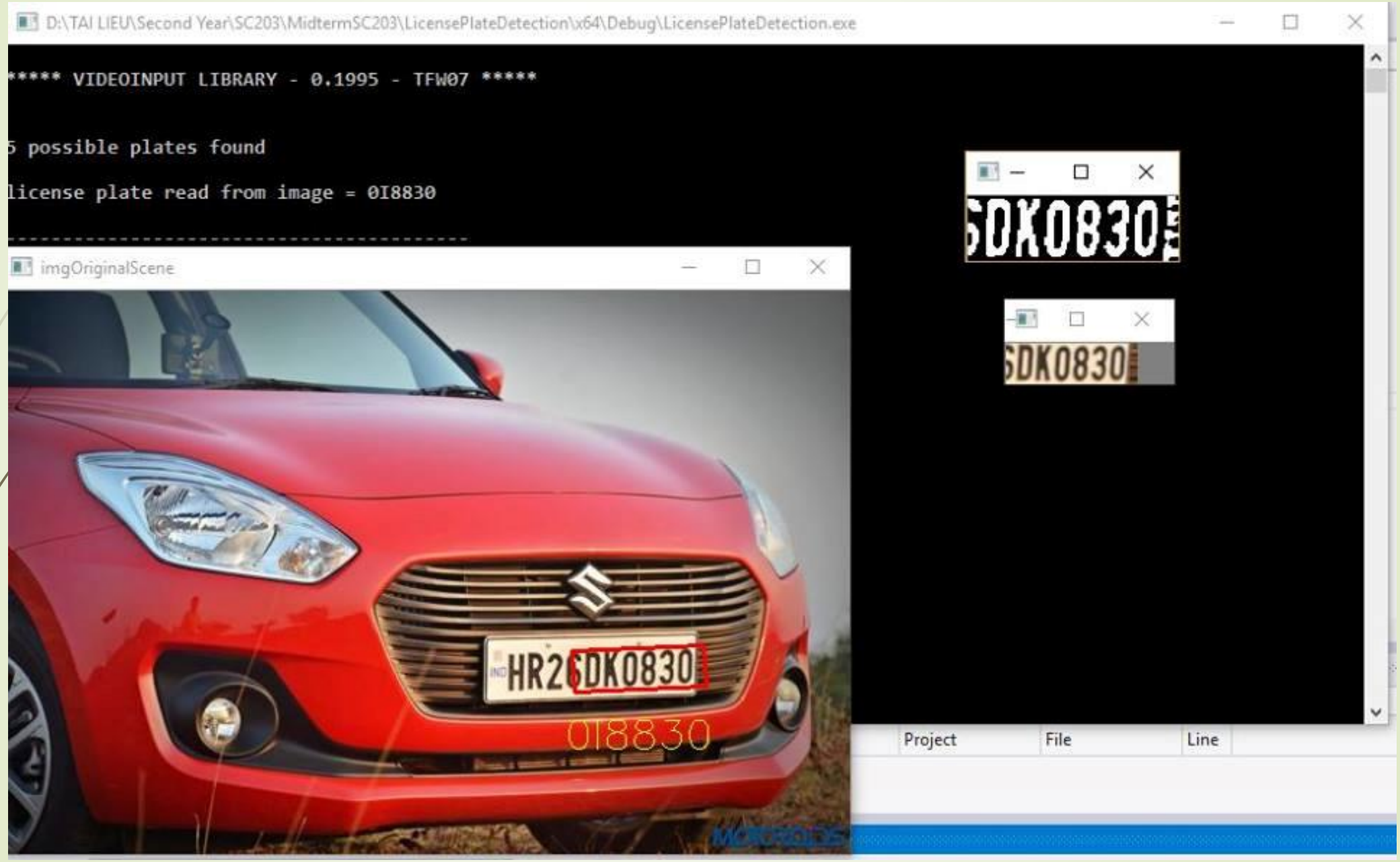
*loadKNNDataAndTrainKNN() is actually called at the beginning of the program, it does not matter when this is called, so long as it's called before recognizeCharsInPlate()

4. Initial results:

Type	Standard(A)	B	A+B
Number of images	15	35	50
Corrects	12	4	16
Corrects rate	80%	11.4%	32%
Errors	3	31	34
Errors rate	20%	88.6%	68%

Errors


D:\TAI LIEU\Second Year\SC203\MidtermSC203\LicensePlateDetection\x64\Debug\LicensePlateDetection.exe
***** VIDEOINPUT LIBRARY - 0.1995 - TFW07 *****
1 possible plates found
license plate read from image = HI20E143
imgPlate
MH12DE1433
imgThresh
MH12DE1433


D:\TAI LIEU\Second Year\SC203\MidtermSC203\LicensePlateDetection\x64\Debug\LicensePlateDetection.exe
***** VIDEOINPUT LIBRARY - 0.1995 - TFW07 *****
5 possible plates found
license plate read from image = 0I8830
imgOriginalScene
HR26DK0830
0I8830
Project
File
Line


D:\TAI LIEU\Second Year\SC203\MidtermSC203\LicensePlateDetection\x64\Debug\LicensePlateDetection.exe
***** VIDEOINPUT LIBRARY - 0.1995 - TFW07 *****
1 possible plates found
license plate read from image = B696969
imgThresh
HR 69 6969
im...
HR 69 6969
imgOriginalScene
GLOBE TOYOTA
HR 69 6969
B696969


D:\TAI LIEU\Second Year\SC203\MidtermSC203\LicensePlateDetection\x64\Debug\LicensePlateDetection.exe
***** VIDEOINPUT LIBRARY - 0.1995 - TFW07 *****
1 possible plates found
license plate read from image = HI20E143
imgPlate
MH12DE1433
imgThresh
MH12DE1433

6. **Problems we have encountered:**

Blur images

Images have different angles

Light-overexposed images

light-underexposed images

OCR Tesseract

Type	Standard(A)	B	A+B
Number of images	15	35	50
Corrects	13	22	35
Corrects rate	86.67%	62.86%	70%
Errors	2	13	15
Errors rate	13.33%	37.14%	30%

7. Future work

- Work on image processing
- Automatically