

16623 Project CheckPoint

Pedestrian Detection based on iOS

Team nam: FlyToSky

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Schedule:

1. Select appropriate positive and negative images from datasets as our training samples;
2. Write codes and implement for each feature extraction method ;
3. Train the classifiers and test the accuracy of them;
4. Add each classifiers to iOS project and analyze the performance of them on iPad;
5. Choose the best one and try to use the knowledge which we learned from 16623 class to improve the performance of the results.

Temporarily, we have done the first two steps of our schedule plan. Since there are in all 5 weeks for us to complete our project, we it's appropriate for us to stay at this point.

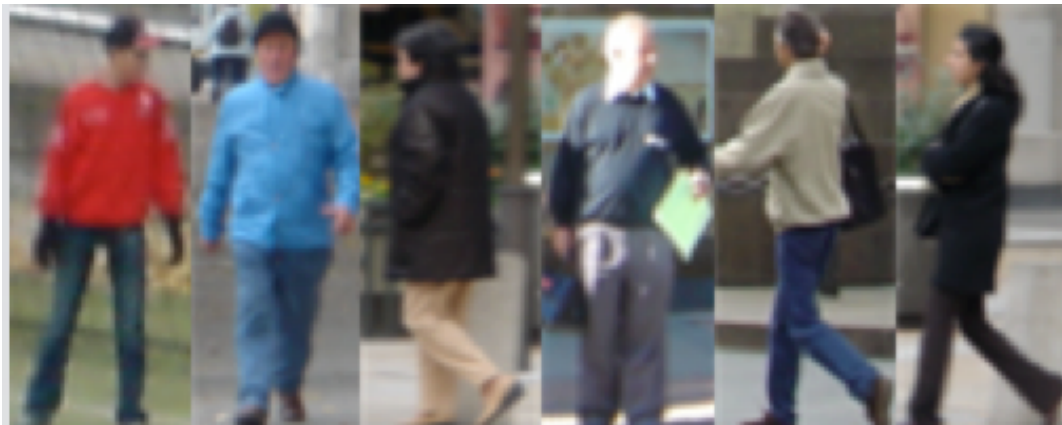
And for next three weeks, we will continue working on the next three steps and we think we can complete our task at last.

Here is the detailed schedule for the coming weeks:

Time		task	person
week1	1st half	learn and try more feature extraction methods	xingchen
	2nd half	write codes and train several classifiers for each method	yuzhang
week2	1st half	implement our calssfiers into iOS project to detect pedestrain in the input images	xingchen
	2nd half	analyze the performance indlucding accuracy and speed of each classifier and then	yuzhang
		choose the best one	
week3	1st half	use the calssfier we chosed and implement it in camera video frames	xingchen
	2nd half	test our program on iPad in reailty situation and environment and improve the	yuzhang
		the robustness and performance using the knowledge we learned from class	

Summary:

At first, we chose three pedestrian database from Internet as our training samples, they're INRIA pedestrian database, CVC02 pedestrian database and CVC07 pedestrian database. Totally, they have about ten thousand pedestrian images. However, these pedestrian images have different size, so we need to cut off the images from their original sizes to the same size. And then we collected the negative images which are images without pedestrians including building, routes, sky, trees and so on as many as positive images.



What's more, we have learned how to extract HOG and Haar-like features from images and trained corresponding classifiers. It took us more time to train these if we input more images. For example, we took three days to train a single classifier this week.

That's what we have done in the previous two weeks and we think we are in the right way. The two main tasks we have done are corresponding to the plan in our proposal before.

We believe that we could produce all our deliverables and we could learn more feature extraction methods to improve our classifiers.

In the presentation video, we plan to show the comparison of performance including speed and accuracy of several feature extraction methods in the reality.