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| No. | Testing purposes and capacity | Result | Limitations of the system |
| 1 | Normally, a picture of a cat is placed in front of the camera to test whether the facial recognition algorithm can detect it successfully. | When index=18 is displayed it means that the dog has been identified. As shown on the left, the command line shows that the index value is not equal to 18, This shows that the accuracy of facial recognition has been verified in this experiment |  |
| 2 | Human Face Recognition | The test results show that index=1 is different from the previous test result of index=17, which shows that the training method uses the facial features of different species as a differentiating factor for recognition. |  |
| 3 | Detection of the recognition limit of the facial recognition function (upper limit of distance) | 屏幕上写着字  描述已自动生成  When index=18 is displayed it means that the dog has been identified. As shown on the left, the command line shows that the index value is not equal to 18, so you can tell that the recognition distance still has some influence on the system. | Hardware limitations: the camera tracking image quality can be optimised.  Software limitations: the facial recognition method does not regionally divide complex images.  Environmental constraints: sufficient light in the room, problems with reflections on the electronic screen, etc. |
| 4 | Can the integrity of the test recognition image information affect the recognition result, can half of the test (cat) image be displayed on the command line find a cat | The index value in the graph is not equal to 18, which shows that image integrity has an effect on the test results | Software constraints: the material for training in facial recognition methods could be further improved. |
| 5 | The weight sensor section runs normally (the command line will show start\_detect\_weight run) | 狗站在地上的电视  描述已自动生成  WeightState equals 0 and shows the recognition delay time in the command line to indicate that the gravity sensor is working |  |
| 6 | Detection of feedback from the gravity sensor: the weight is set on the GUI; the motor makes the pump work and the weight of the water coming out is the same as the specified weight. | The motor and pump work normally, the quality of the water output is consistent with the specified weight, and real-time feedback is achieved. |  |
| 7 | Detects memory leaks in dynamically created objects of code. Whether memory that is no longer needed is freed at the end of the program run. | PID: ID of the process USER: owned by the process  PR: The priority level of the process, the smaller the priority is to be executed  VIRT: virtual memory occupied by the process RES: physical memory occupied by the process SHR: shared memory used by the process  S: The state of the process. S means sleeping, R means running, Z means dead state, N means that the priority value of the process is negative  CPU: The use of the CPU used by the process  MEM: The percentage of physical memory and total memory used by the process  TIME+: The total CPU time occupied by the process after it is started, that is, the cumulative value of the CPU usage time  COMMAND: Process startup command name    Memory leak test: Monitoring the total memory of the system after running, after half an hour it was observed that the system memory did not increase, thus determining that there was no memory leak problem. |  |