CVGesture

Performance Report

2017-12-25

OPEN AI LAB

Revision Record

Date	Rev	Change Description	Author
2017-10-19	0.1.0	Initial version	
2017-12-25	0.2.0	New cascade classifier	Hao Han

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1 Purpose

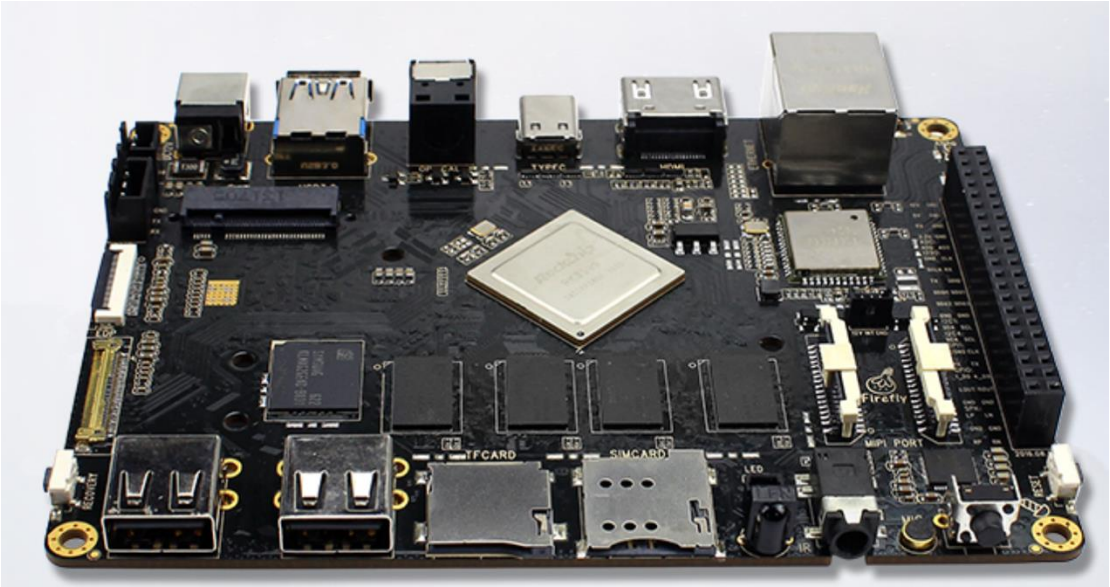
This Report is tested on RK3399 platform. The report includes CPU data.

2 Test Environment

Hardware SoC : Rockchip RK3399

- GPU: Mali T864 (800MHz)
- CPU: Dual-core Cortex-A72 up to 2.0GHz (real frequency is 1.8GHz); Quad-core Cortex-A53 up to 1.5GHz (real frequency is 1.4GHz)

Operating System : Ubuntu 16.04



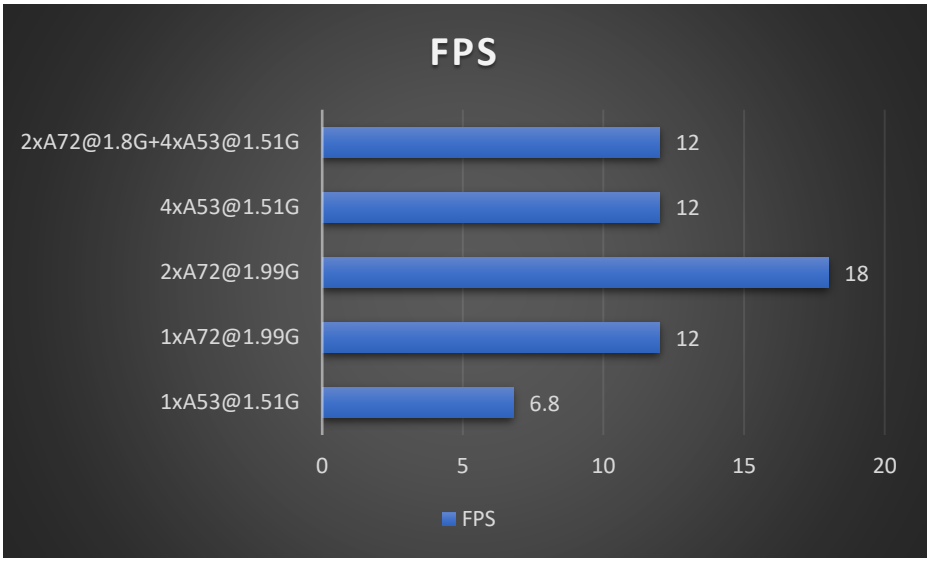
Software : OpenCV 3.3.0

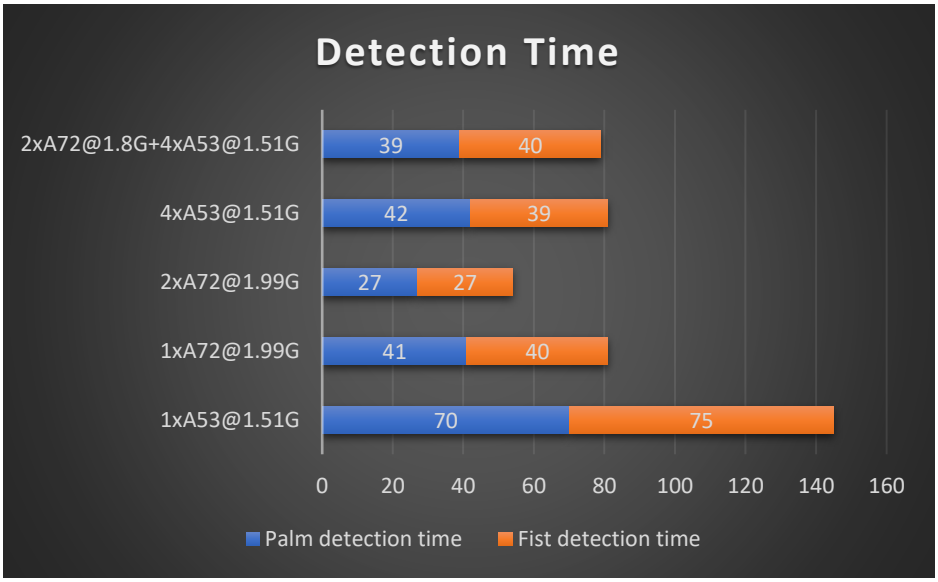
3 Performance On Different Cores

Calculate the FPS(Frame rate Per Second) in five seconds, and print the result in terminal. Skip the result of first five seconds. Recognize two gestures: palm and fist. The palm and fist detection time are also averaged in five seconds, skip the result of first five seconds.

FPS on different cores, 640x480 resolution

	FPS	Palm detection time (ms)	Fist detection time (ms)
1xA53@1.51G	6.8	70	75
1xA72@1.99G	12	41	40
2xA72@1.99G	18	27	27
4xA53@1.51G	12	42	39
2xA72@1.8G+4xA53@1.51G	12	39	40





4 Conclusion

From the above test cases, we can deduce that :

- the performance on 2xA72 is best, it has over 50 percent increase versus 1xA72
- the performance on 4xA53 increase 100 percent versus 1xA53
- the performance on 1xA72 is similar versus 4xA53

The algorithm should run on A72 or 4xA53, single A53 core cannot meet the performance requirement.

5 Testing Issues

There are many known factors that will significantly affect the performance of the application:

- The **version of OpenCV should be 3.3.0**, using OpenCV2 will slow down the detection
- The test is under **complex background**, running under **simple background like a plain wall** will be significantly faster (around 40+ fps using A72x2)